APRIL 1951

PLEASE ROUTE THIS COPY TO	
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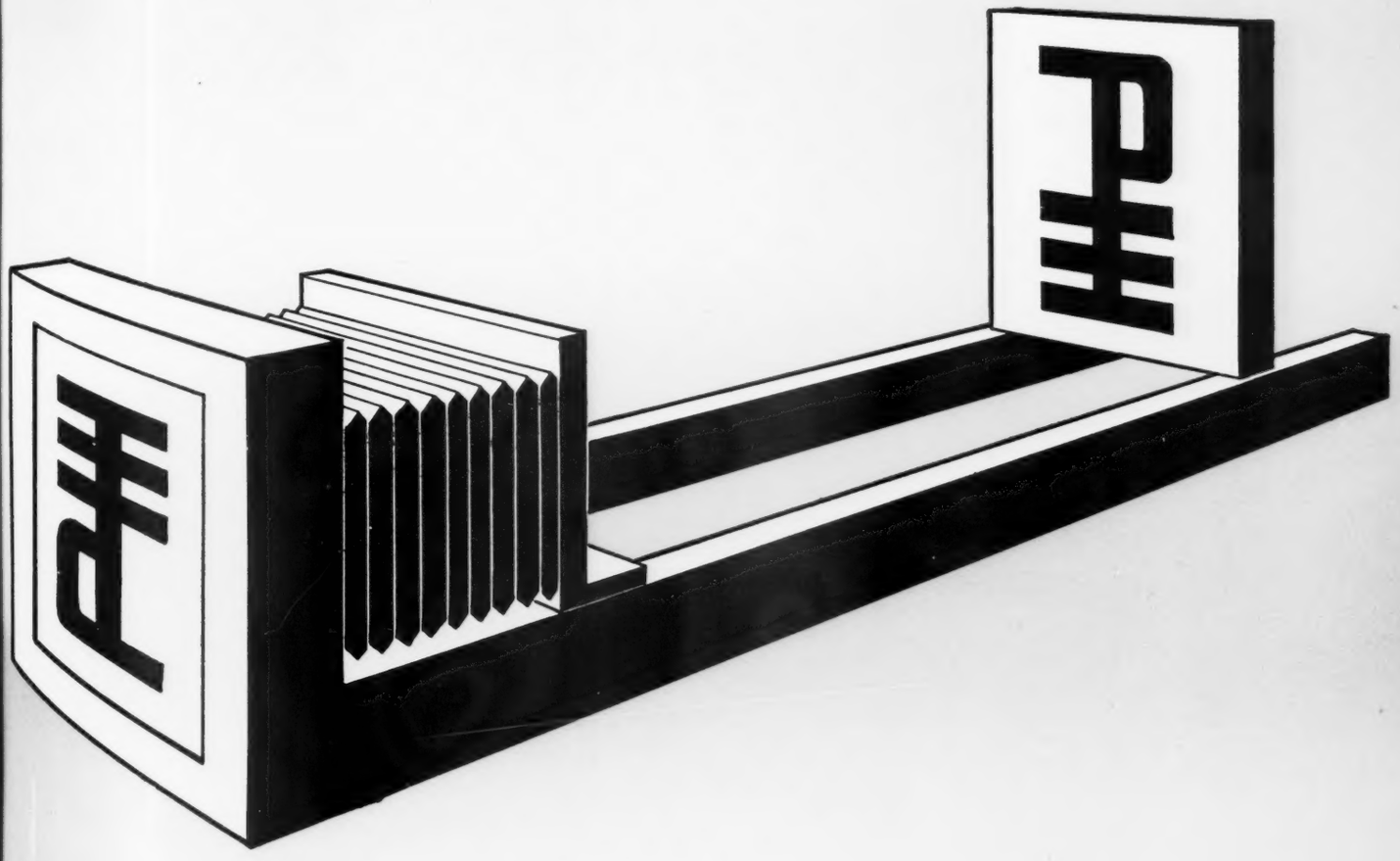
Plant Supt.	Mailing F'm'n
Platemaking F'm'n	Maintenance Supt.
Composing F'm'n	Purchasing Agt.
For filing, please return to	

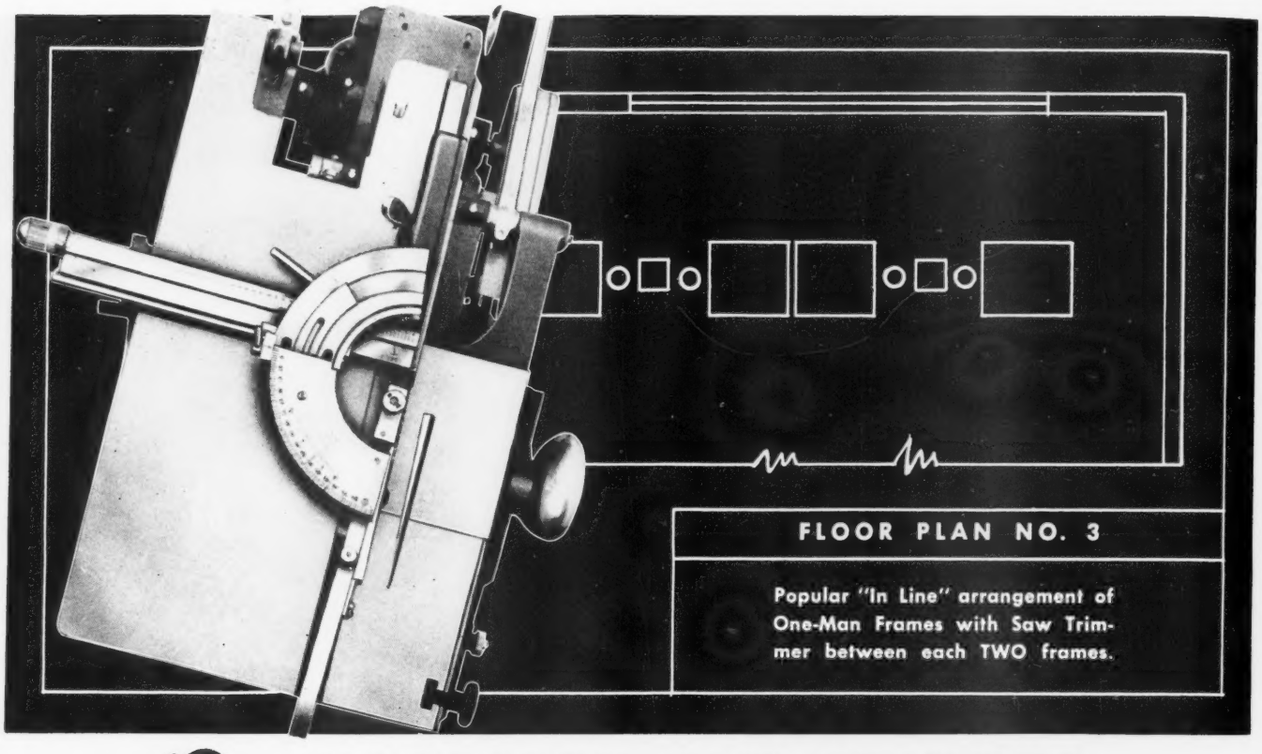
PRINTING EQUIPMENT

Engineer

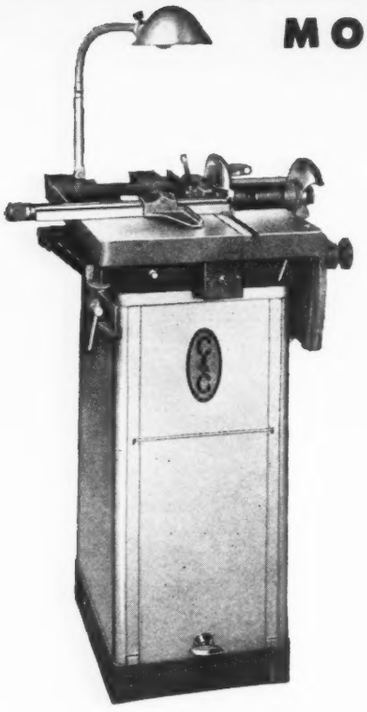


AN INDUSTRY-WIDE TECHNICAL PUBLICATION

Composing Room Efficiency Centers on your SAW TRIMMER



MORRISON SAW TRIMMER



Model 3-A Saw Trimmer

Performs MORE jobs faster, safer, more accurately. Table, 30"x18". Smaller Model 45, with 18"x27" table, and "Pistol-Grip" Blade Adjustment. Also low cost "45 Special" in bench or cabinet model.

Any-Angle Gauge

Saves time when working on ANGLE LAYOUTS

Whether you need a 2° lead "sliver" for type wedging, or have to take an 85° angle slice off a tint plate to fit a fancy layout—the Morrison ANY-ANGLE GAUGE will handle the job faster, safer, more accurately. It simplifies cutting spacing material and plate matter to any angle from 2° to 90°, and helps you place type matter on any angle in exact position called for by your layout. You just lay an ordinary protractor on the copy, and set the Angle Gauge to the exact degree indicated—and saw the necessary wedge or angle.

The simplified ANY-ANGLE GAUGE is only one more feature that makes the MORRISON Saw Trimmer a great time, money, and labor-saver in your composing room. Check ALL the features. You'll be surprised at how many MORE jobs you can do FASTER with a MORRISON. There's an owner near you where you can see it, try it yourself. Write for his name, or for a descriptive folder "Essential to Composing Room Economy."

Other Exclusive MORRISON Features:

- "Behind the Gauge" Workholder.
- Patented Universal Saw Blade, with Saw Grinding Attachment.
- Miter Gauge and Right and Left-Hand Miter Vise.
- Miter and Lineup Gauge.
- Automatic Index for Plate Cutting and Trimming Positions.
- Swing-out 135 Pica Extension Gauge.

Get **MORE** *for Your Money in Saw Trimmers...* **BUY MORRISON**

Symbol of Operating Economy

MC THE MORRISON COMPANY MILWAUKEE WIS.

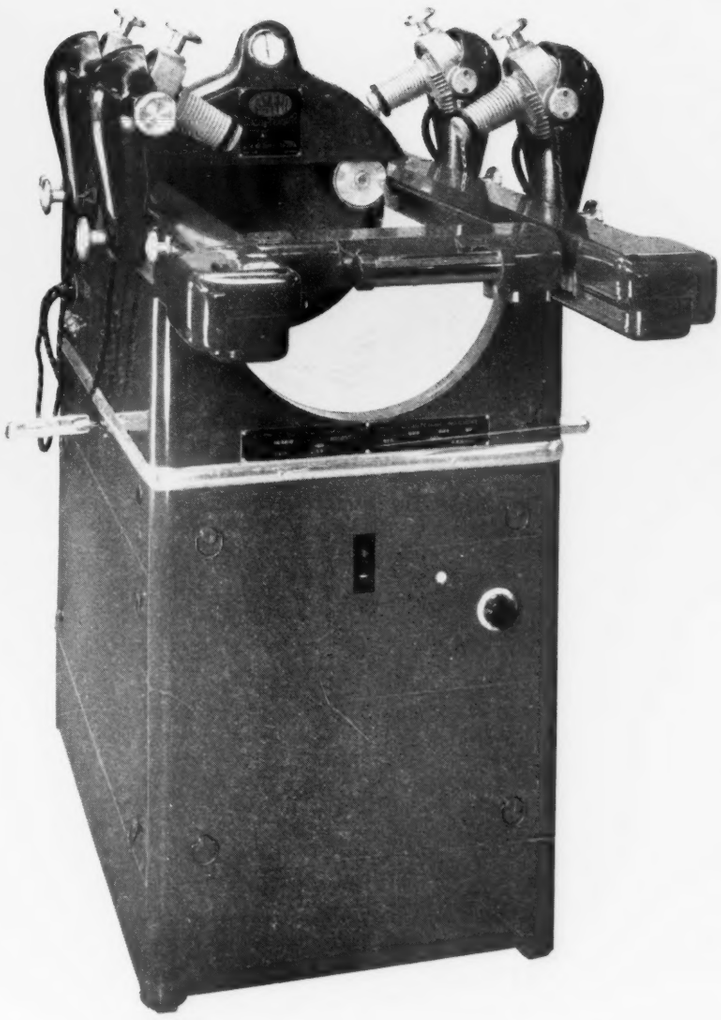
THE *Morrison* COMPANY

PRECISION MACHINES FOR THE GRAPHIC ARTS INDUSTRY

125 W. Melvina Street, Milwaukee 12, Wisconsin

USE A STA-HI MASTER TRIMMER!

the new, easy, Sta-Hi way to register newspaper color



STA-HI® *Master Trimmer*

- With this machine you can obtain speedy, positive color register in your stereotyped page mats, simplifying and making less costly your entire color printing process!
- The new STA-HI Master Trimmer eliminates recasting of color plates. Errors in the moulding operation and deviations in shrinkage can be caught and corrected before plates are cast
- The Master Trimmer makes unnecessary the "cocking" of plates on the press, cuts down "shimming" to the absolute minimum—because mats are in exact register when they go into the casting box.
- This time and money saving equipment can be furnished for use with semi-cylindrical or tubular presses; on daily r.o.p. color production or on comic and magazine color work.
- We will be glad to send you an illustrated brochure describing the Master Trimmer in detail. Write today!

Sta-Hi Corporation

"SUPERIOR NEWSPAPER PRODUCTION MACHINERY"

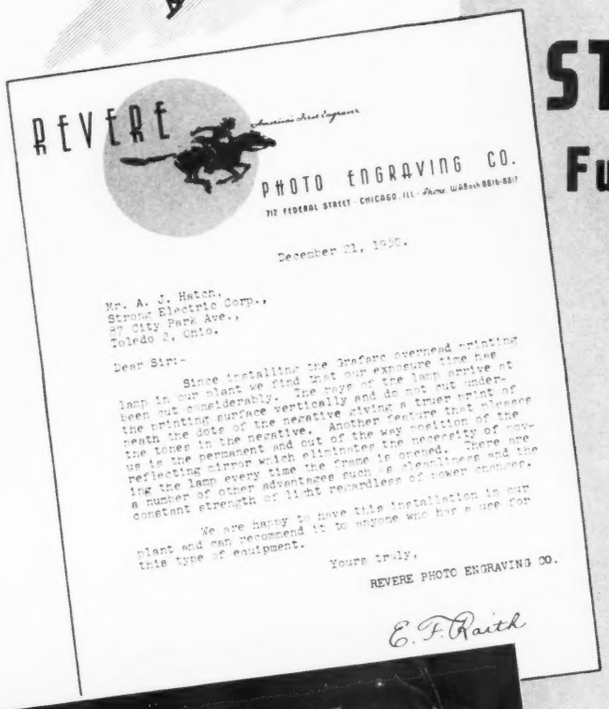
235 W. WASHINGTON BOULEVARD ● BOX 152, WHITTIER, CALIFORNIA

NORTH
SOUTH
EAST
WEST
EVERYWHERE

they're installing

STRONG GRAFARC

Fully Automatic High Intensity ARC LAMPS



REVERE PHOTO ENGRAVING CO.
712 FEDERAL STREET · CHICAGO, ILL.

December 21, 1950.

Mr. A. J. Hatch,
Strong Electric Corp.,
37 City Park Ave.,
Toledo 2, Ohio.

Dear Sir:-

Since installing the Grafarc overhead printing lamp in our plant we find that our exposure time has been cut considerably. The rays of the lamp arrive at the printing surface vertically and do not cut under-neath the dots of the negative, thus a truer print of the tones in the negative. Another feature that advance us is the permanent and out of the way position of the reflecting mirror with eliminates the necessity of moving the lamp every time the frame is opened. There are a number of other advantages such as cleanliness and the constant strength of light regardless of power changes.

We are happy to have this installation in our plant and can recommend it to anyone who has a use for this type of equipment.

Yours truly,
REVERE PHOTO ENGRAVING CO.

E. F. Raith

Installation of Strong Grafarc No. 32520 overhead printing lamp for horizontal frames at Revere Photo Engraving Company.

IN YOUR PLATE MAKING DEPARTMENT

- Cut exposure time in half
- Assure sharper dots
- Eliminate dot undercutting by crossover of reflected light rays

IN YOUR CAMERA GALLERY

- Uniform illumination on work of any size
- Extreme steadiness of light volume
- Constant color temperatures
- Eliminate illumination variable in accurate control of densities
- Power to punch through dense kodachromes

ON STEP AND REPEAT MACHINES

- Precise control of intensity for accurate repeats.

Approximately twice the light per arc watt results from the use of a silvered glass reflector, instead of a metal reflector. Models for all photo-mechanical reproduction processes. Adapters to fit most cameras and photo-composing machines. Present line supply wiring is usually adequate.

USE COUPON NOW!

THE STRONG ELECTRIC CORPORATION
307 CITY PARK AVENUE TOLEDO 2, OHIO

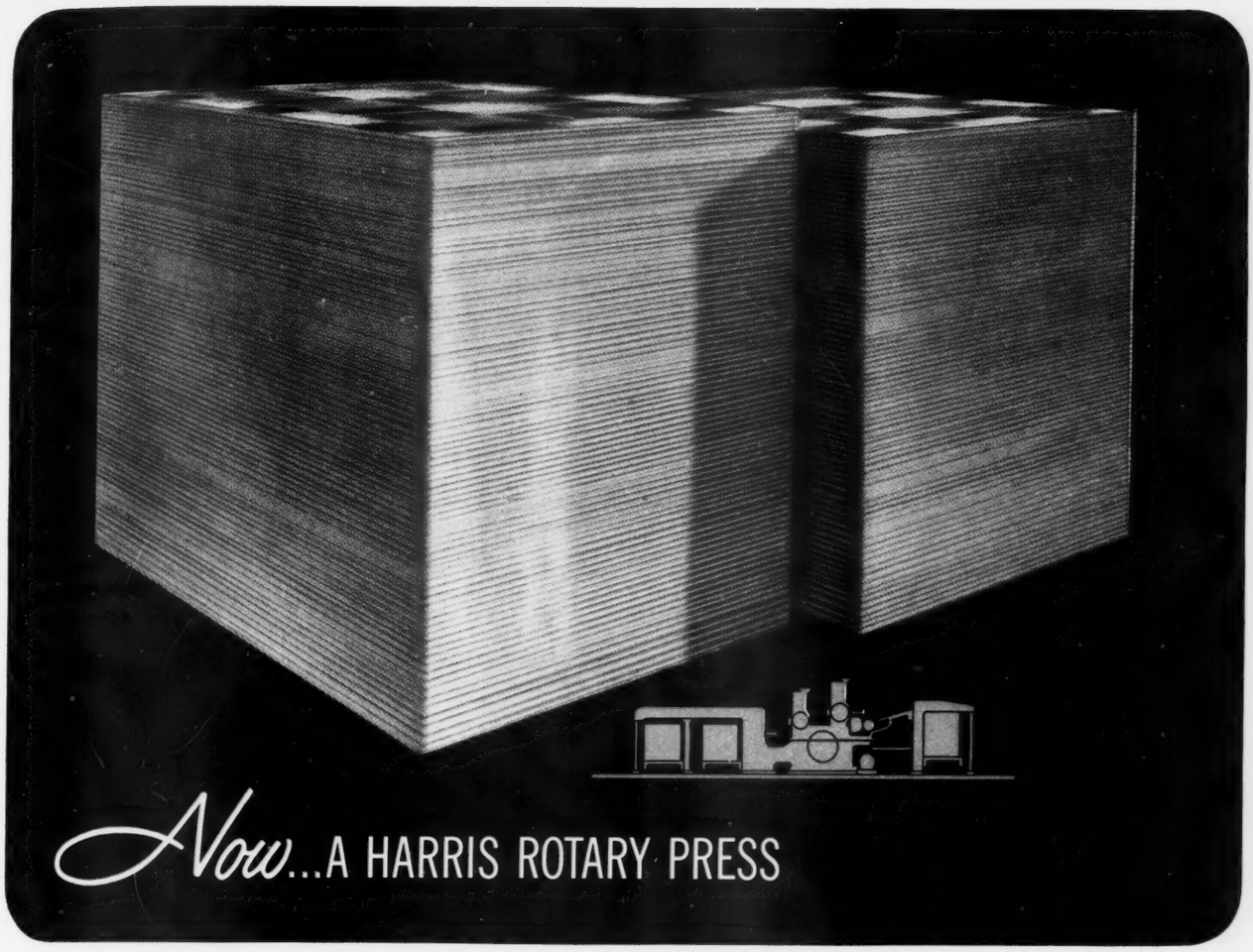
Please send free literature and prices.

NAME_____

FIRM_____

STREET_____

CITY & STATE_____



Now...A HARRIS ROTARY PRESS

with TWO DELIVERY PILES *for non-stop unloading*

Yes, *two* delivery piles! Sheets can be fed to either pile or both in this new double-delivery system. It allows twice as much drying time for finished sheets. It allows the piles to be unloaded without stopping the press.

This is just one of the special features of this new Harris two-color 45 x 65″ rotary letterpress.

For instance, *5 form rollers* on each color unit assure smooth, even coverage on the most difficult solids. *Standard plate cylinders* take plates from existing precision-platemaking equipment.

Sheets get less handling during transfer in this new Harris letterpress. A *single cylinder* between units, with the transfer grippers making only one grip and one release, protects register and prevents damage to sheets. Harris *feed roll* register system gives positive control of front register without damage to the sheet.

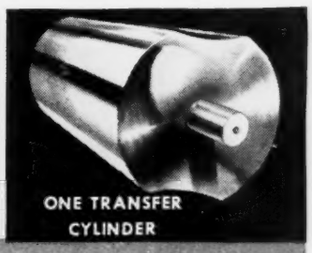
Your printing can be made more profitable. May we discuss how this new press can help?

HARRIS-SEYBOLD COMPANY
DEPT. G, GENERAL OFFICES CLEVELAND 5, OHIO

FIVE FORM ROLLS

FEED ROLL REGISTER

STANDARD PLATE CYLINDERS


ONE TRANSFER CYLINDER

CHECK THESE FEATURES WITH THE MEN WHO USE THEM

WOOD RUNNING LIKE A CLOCK

THE INDIANAPOLIS STAR AND NEWS

EUGENE C. PULLIAM
PUBLISHER

WILLIAM A. DYER, JR.
GENERAL MANAGER

December 15, 1950

Mr. I. Tornberg
Vice President
Wood Newspaper Machinery Corp.
501 Fifth Avenue
New York, N. Y.

Dear Mr. Tornberg:

You recently inquired as to the current operation and performance of our "8-unit Wood press" and of the two new color half-decks and other new color printing facilities.

I am happy to be able to report that the press is running like a clock day and night, turning out the Indianapolis Star, The Indianapolis News and the Sunday Indianapolis Star. Its operation, as well as that of the color couples, is in every way most satisfactory. Color advertising (one, two and three colors and black) has become an everyday occurence in Indianapolis, and we are greatly pleased with the performance and flexibility of our new Wood color printing equipment.

I would also like to take this opportunity to comment on the excellence of Wood service, which we have become accustomed to take for granted in keeping our Wood press and our all-new Wood stereotyping department functioning day in and day out without missing a beat.

Sincerely,

W. A. Dyer Jr.

William A. Dyer, Jr.

WAD:lb

WRITE FOR FULL INFORMATION

IF IT'S Wood IT'S GOOD

WOOD NEWSPAPER MACHINERY CORPORATION

PLAINFIELD, NEW JERSEY • SALES OFFICE: 501 FIFTH AVENUE, NEW YORK 17

PRINTING EQUIPMENT *Engineer*

AN INDUSTRY-WIDE TECHNICAL PUBLICATION

Published especially for management, production and mechanical executives responsible for printing production and the specification of equipment and supplies used in the commercial, magazine, private plant and daily newspaper fields.

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LEADING ARTICLES

April 1951

Good Plastics Molds for Electrotyping 27
AXEL LUNDBYE

Completes Improvement Program . . . 29
KENNETH L. CHATTERS

Increased Newspaper Production Costs 31
JOHN R. COPELAND

NPA Printing and Publishing Div . . . 32

Conference Dates Box 33

Planning Improves Workflow in Commercial Composing Room 34

The ABC of Offset—XIV 38
GEORGE JOS. LENZER

Equipment and Supplies 40
Times Roman Booklet, 40
Deep Etch Process, 40
Graphic Scales Set, 40
Industrial Lighting, 40
Protects Electric Coils, 40
2000 lb. Capacity Fork Truck, 40
Pocket-Size pH Meter, 41
Linotype Caledonia, 41
Portable Conveyor, 41
Rubber Plasticizer, 41
Industrial Humidifier, 41
Drills and Punches Booklet, 41
Silk Screen Equipment, 41
Ticket Printing Press, 41

Recent Equipment Reports 42

Pyroxylin-Treated Book Cloths 43
M. S. KANTROWITZ

Technical Clinics Predominate at Northwest Newspaper Mechanical Conference 44
HORACE ANNIS

Silent Operation—No Maintenance . . 46

Patents For the Graphic Arts 47

Executive Paragraphs 54

Books 57
Theory and Practice of Bookbinding, 57

Cooperative ANPA Research Explained 69
C. M. FLINT

Mr. Publisher:

As you well know, the production of a clean cut, well printed newspaper starts in your composing room . . . First the form in the chase and then the all important matrix from which the plate is cast.

BEST MATS =

BEST PLATES =

BEST PRINTING!

SCOTT Ideal Matrix Rolling Machines

. . . are specially designed to eliminate all imperfections and produce sharp, full depth Rolled Mats free from mechanical buckling. Scott Ideal Matrix Machines are reasonably priced and carried in stock for immediate delivery. Write for literature.

WALTER SCOTT & CO. INC.

PLAINFIELD, NEW JERSEY

Buy with Confidence . . . Buy **SCOTT**

15-1-4

The Ludlow Way

Immediate Production . . . The Ludlow is always ready for use, without the delays incident to preliminary type manufacture or forced distribution. The compositor goes right to work on live copy, and the job is soon set and made up in solid, easily-handled sluglines.

Ample Type Supply . . . The Ludlow affords the equivalent of a practically unlimited type supply, in a wide range of typefaces and type sizes. The compositor proceeds with the job without having to replenish cases or "pick" forms to get enough material to finish his work.

Ludlow matrices are quickly and easily assembled in the stick

Simple to Operate . . . The Ludlow is simply designed for easy, efficient operation, and is free from unnecessary "gadgets" or attachments. Any competent printer readily learns to produce quality job and display composition that meets most requirements.

Multiple Forms . . . The Ludlow repeat-casting feature permits handling the job in multiple units, and enables the plant to make full use of pressroom and bindery capacity. This one Ludlow advantage has made real money for the user on both commercial and specialty printing.

Profitable Operation . . . With the Ludlow on the job, "waste motion" is eliminated and practically all the time is chargeable. With numerous other short-cuts and economies all along the line, Ludlow operation is most profitable, as attested by hundreds and hundreds of satisfied users.

Ludlow Typograph Company · · 2032 Clybourn Avenue, Chicago 14, Illinois

Set in members of the Ludlow Radiant family

"Hey! they can take it!
RAPID ROLLER CO.
FEDERAL AT 26TH
CHICAGO 16, ILL.
D. M. RAPPORT
PRESIDENT

It is no accident that Cottrell multi-color presses are fixtures in America's finest pressrooms. Cottrell's leadership stems from a century of close cooperation with the printing industry to improve multi-color wet process printing and the rotary presses to produce it.

This cooperation has resulted in the development of high speed rotary multi-color presses which bring the letterpress process closer to perfection; accurately curved plates that fit the cylinder perfectly; spirally grooved cylinders with rapid register hook system for quick plating and lockup; modern and efficient devices to cut down starting time and maintain continuous operation.

Whether for publication or commercial printing, on long or short runs, letterpress printing with Cottrell presses is outstanding for faithful and accurate reproduction.

If you are not now using Cottrell multi-color presses, find out NOW how the application of modern high-speed production methods can help you meet today's rising costs and increase the quality of your printing.

C. B. Cottrell & Sons Company
Westerly, Rhode Island

Claybourn Division: Milwaukee, Wisconsin
Sales Offices: New York, Chicago, London

TRADE YOUR DROSS FOR MOR-TIN

The more dross you have, the more tin you need to tone up your metal, because dross steals good metal, especially tin, from the melt.

You can get the tin and make substantial savings at the same time. Just trade in your dross for Federated MOR-TIN® Metal. You need not make a large cash outlay because your dross allowance is substantial.

Add a pound of MOR-TIN to the metal in your pot for every pound of dross you take out. Chemical balance of the metal is immediately restored and maintained at a point which assures you sound, close-grained, durable casts which print with hairline sharpness.

For more information . . . for fast delivery . . . call or write the near-by Federated office. There are 22 across the nation.

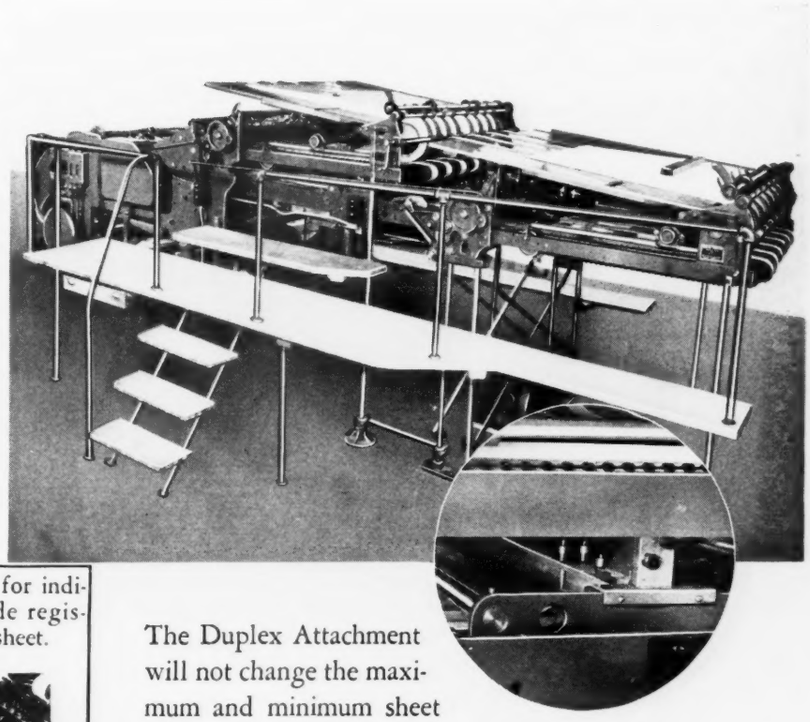
Federated Metals Division

Federated first in the non ferrous field FMD

AMERICAN SMELTING AND REFINING COMPANY • 120 BROADWAY, NEW YORK 5, N. Y.

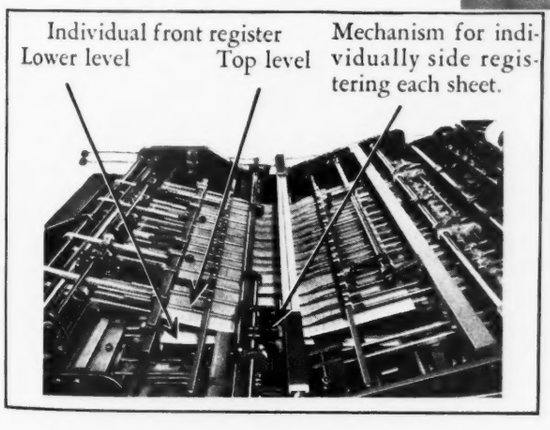
How to Adapt Your Present Dexter Model "N" Quad to Run 128 Pages...

Dexter Model "N" Quad Book Folder, equipped with New Duplex Attachment. Rear view showing two Cross Feeders. Inset shows additional drop bar perforator as seen from side of conveyor, underneath first Cross Feeder.



Your Model "N" Quad can now be converted to practically double its present capacity. With the New Dexter Duplex Quad Attachment it will deliver *four* 32-page closed head signatures, perforated head and foot — or two 64-page signatures (inserted 32s) — instead of its present *two* 32s.

This greatly stepped-up production can be effected without materially increasing floor space or operating cost . . . and your Model "N" Quad can *still* be operated as a standard single quad delivering the usual four 16-page signatures or two 32-page signatures (inserted 16s) at each operation.



Duplex Attachment as seen from above. Sheets at both first fold levels.

The Duplex Attachment will not change the maximum and minimum sheet sizes now handled by your Model "N". However, it *will* effect savings in folding costs and *still further* economies in subsequent gathering and sewing operations.

We will be glad to send you complete information about the new

DEXTER DUPLEX QUAD ATTACHMENT

Dexter • Christensen • McCain

Modern Machines for Printers and Binders

Dexter Folder Company, General Sales Offices, 330 West 42nd Street, New York 18, N. Y.

Associated with the de Florez Company for Special Engineering

Branch Offices, Domestic and Foreign Agents

"Bag factory" on TIMKEN® bearings cuts, prints, folds in one operation

THE machine shown below is practically a bag factory in itself. Made by the Schmutz Mfg. Co., it cuts, prints and folds cloth bags—all in one operation. It does a precise, 4 color printing job on anything from the lightest cotton cloth to the heaviest burlap.

To insure precision, reduce maintenance and keep friction and wear at a minimum, a total of 28 Timken® tapered roller bearings are used on the impression cylinder, type cylinder, cutting knife and feed belt rollers.

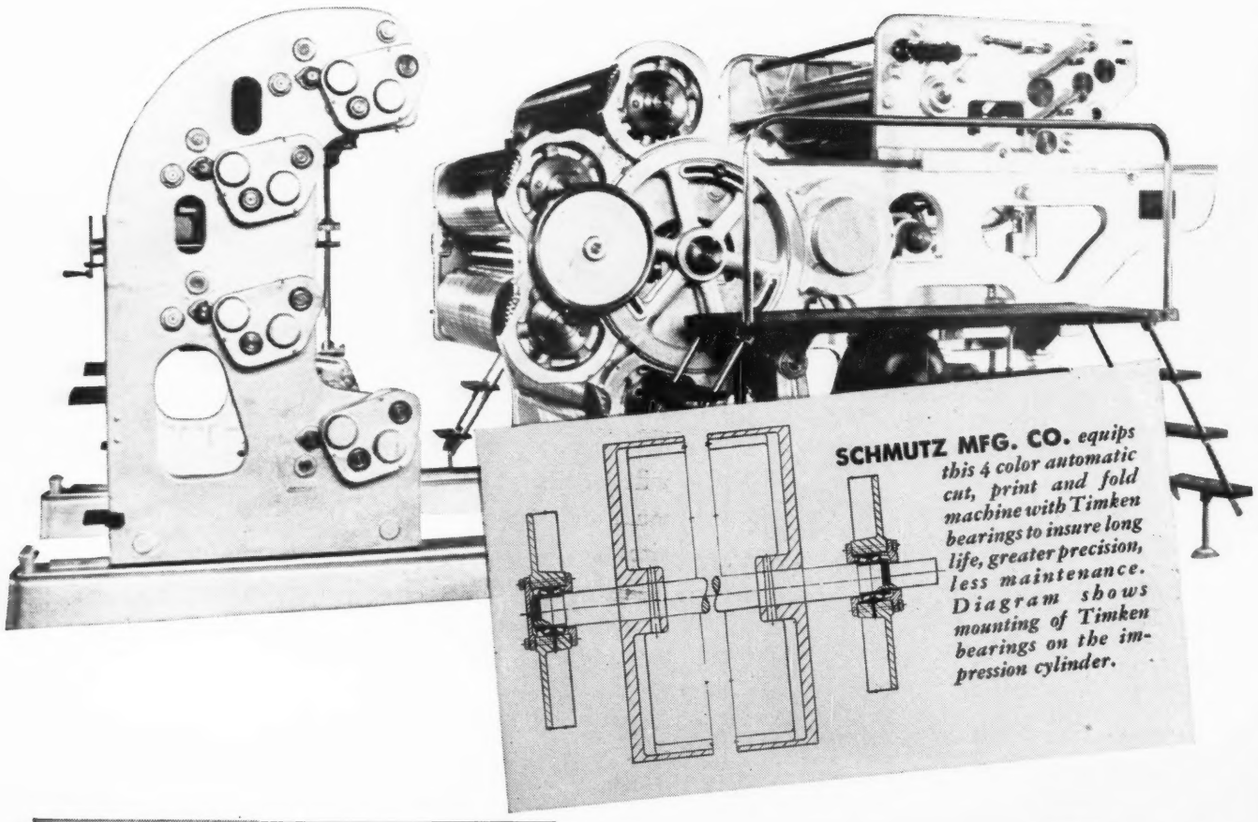
The tapered construction of Timken bearings permits them to take radial and thrust loads in any combination. Cylinder alignment is precise, permitting minute pressure adjustments. And line contact between the rollers and races of Timken bearings gives extra load-carrying capacity.

Because Timken bearings permit the use of more effective closures, maintenance costs are reduced. The smooth surface finish of the rollers and races practically eliminates friction. Speed restrictions imposed by bearings are removed. Wear on moving parts is minimized.

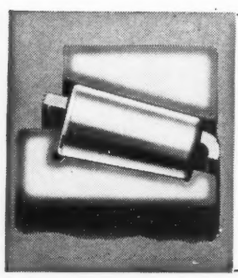
Timken bearings normally last the life of the machine because they're engineered for the job, made of Timken fine alloy steel and precision manufactured.

No other bearing can give you *all* the advantages you get with Timken bearings. Insist on bearings that carry the trade-mark "Timken" for every machine you build or use. The Timken Roller Bearing Company, Canton 6, Ohio. Canadian plant: St. Thomas, Ontario. Cable address: "TIMROSCO".

This symbol on a product means its bearings are the best.



SCHMUTZ MFG. CO. *equips this 4 color automatic cut, print and fold machine with Timken bearings to insure long life, greater precision, less maintenance. Diagram shows mounting of Timken bearings on the impression cylinder.*



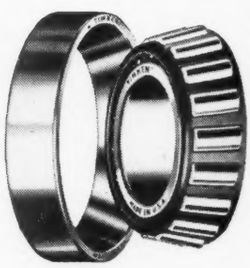
GREATER LOAD AREA

Because the load is carried on the *line* of contact between rollers and races, Timken bearings carry greater loads, hold shafts in line, wear longer. The Timken Roller Bearing Company is the acknowledged leader in: 1. advanced design; 2. precision manufacturing; 3. rigid quality control; 4. special analysis steels.

TIMKEN

TRADE-MARK REG. U. S. PAT. OFF.

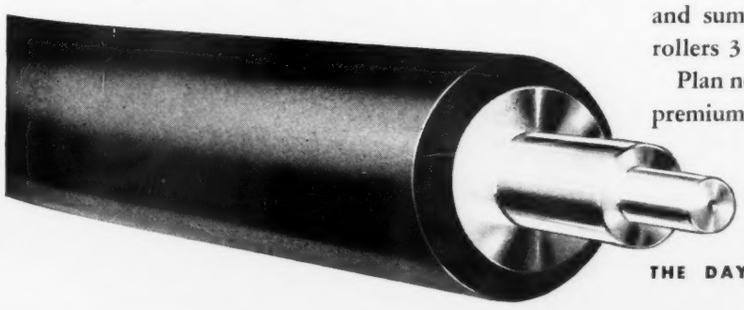
TAPERED ROLLER BEARINGS



NOT JUST A BALL ◯ NOT JUST A ROLLER ▭ THE TIMKEN TAPERED ROLLER ▭ BEARING TAKES RADIAL ◫ AND THRUST →◫← LOADS OR ANY COMBINATION →✳←

Now Dayco Newspaper Rollers give you deep, true, live colors, fast as the news, on your high-speed presses.

Daycos can be used for color or black and white, in any position. They handle all types of ink; are unaffected by fast-drying "special" inks, washup solutions, oils, acids, moisture. Their diameter, shape and softness are unaffected by press speeds or climatic conditions—remain accurate to 1/1000 of an inch. Use the same rollers winter and summer, without change. Daycos outlast ordinary rollers 3 or 4 times.



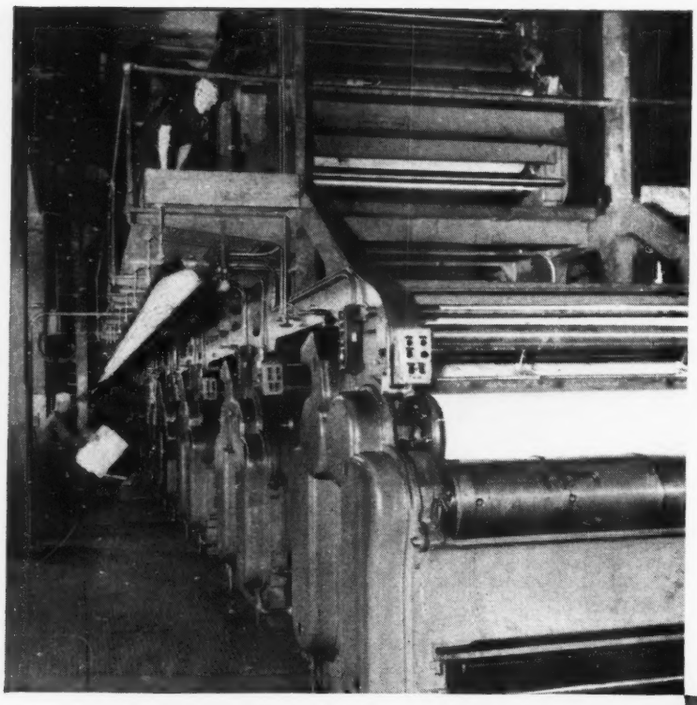
Plan now to increase advertising revenue, earn the color premium, with the quality reproduction that Daycos will give you in all press positions! For more news of the new Daycos and what they can do for you, write:

THE DAYTON RUBBER COMPANY, DAYTON 1, OHIO

Dayton Rubber

Pioneers of Improvements for Better Printing

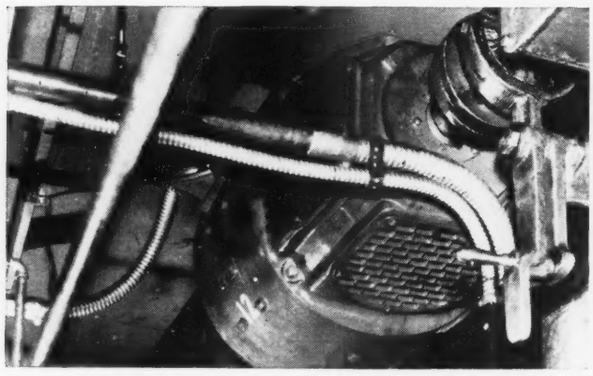
MODERN ELECTRIFICATION boosts pressroom efficiency



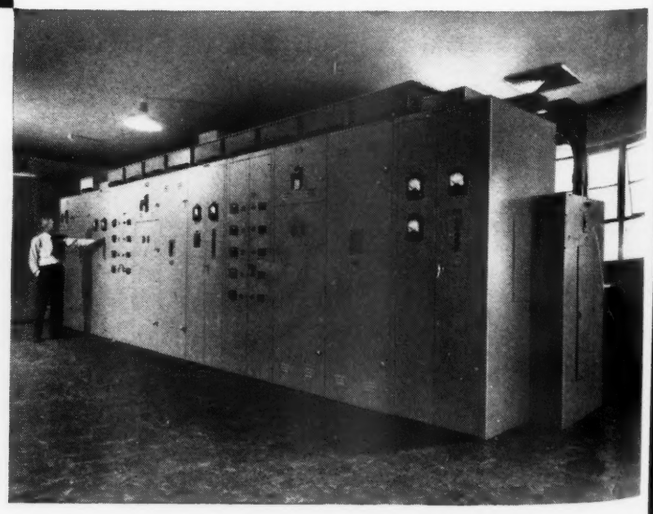
Installed in an Eastern newspaper plant this press is driven by General Electric d-c motors coaxially mounted with one motor on each unit to accommodate any possible mechanical combination of presses and simplify drive selection for these combinations.

G-E ELECTRONIC PRESS DRIVE FOR ROTARY PRESSES INCREASES OPERATING FLEXIBILITY, GIVES YOU:

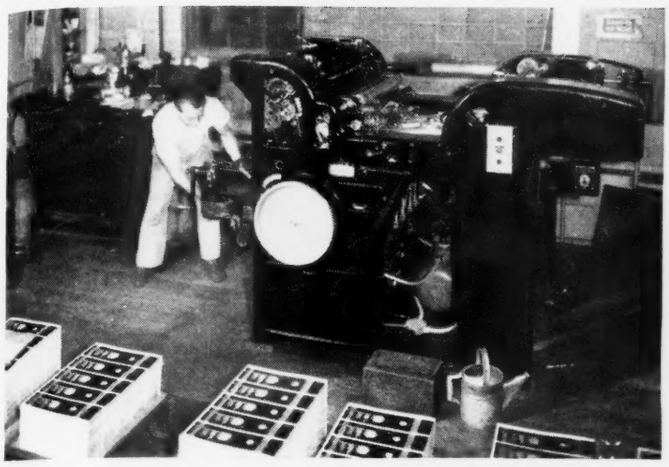
- Minimum speed variation under load
- Reduced power loss
- First real stepless speed adjustment
- Simplified drive installation
- Easy, economical maintenance
- Simplified control installation
- Finger tip control operation



One of the G-E electronic press drive motors. No need for slow motion motors, overrunning clutches, or drive brakes. One motor on each unit does it all . . . threading, jogging, running, and braking.



Control room in a west coast plant showing neat, compact, metal-clad controls which come factory-wired and need only be set up and interconnected. The need for extra ventilating equipment and servicing is also greatly reduced.



In this large Eastern printing plant, where a small offset press is driven by a G-E ACA adjustable-speed motor (center) one of the many advantages the operator likes is elimination of controller heat which formerly caused ink to pile up on one side of the press.

Now the time-tested adjustable speed ACA motor with built-in preset speed adjustment is combined with pilot motor and control unit. Can be furnished with motor mounted adjustable brake as shown.

This outstanding new drive for commercial printing is specially designed without resistors to give you:

D-C performance directly from A-C power

Space saving through press mounting

Wider printing speed range

Optimum press speeds through finer speed adjustment

Maximum output of delivered sheets for all jobs

Ease of installation, operation, maintenance

Low over-all cost

1. A complete line of electric equipment to meet your needs:

Electronic press drive for large rotary presses
AC drives for medium and small rotary presses
ACA adjustable speed drive for commercial printing
Web severing devices
Web break detectors
Push button stations
Web register control equipment
Stereotype heating and control equipment
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653-13

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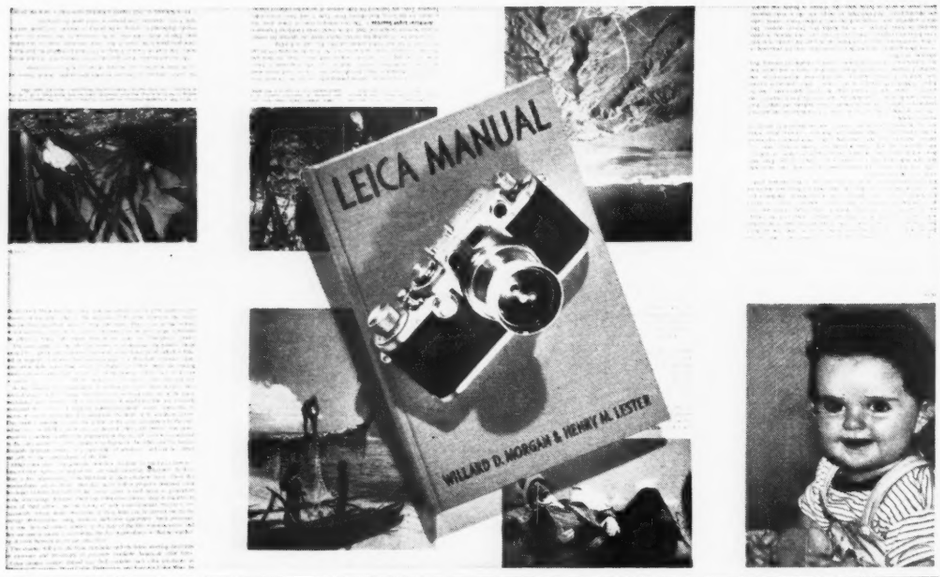
NEW EDITION OF THE FAMOUS "LEICA MANUAL" PRINTED WITH IPI BLACKS, GEMTONE COLORS



Top-Flight Printing By Carey Press Corp. Produces Quality 35 mm Camera Guide

"World's most wanted 35 mm camera"—that's what camera fans call the Leica. And the famous Leica Manual (Morgan and Lester, publishers) is their final authority on 35 mm cameras. No wonder Carey Press Corp. (N.Y.) chose IPI Holdfast halftone blacks and IPI Gemtone inks for this great book.

Accurate reproduction of photos is a must for the Leica Manual. Each illustration proves a point—the effect of proper focus, lighting, exposure, composition and a dozen other factors that make or break a picture. Only finest halftone blacks, process colors will do.

New Color Section a Hit—Has Life, Snap & Sparkle

The color section of this latest Leica Manual is a beauty. The color photos have life, snap, sparkle and depth. Fine engraving, skilled craftsmanship and IPI Gemtone inks produced these superior results.

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Best Edition Yet—Say Fans, Reviewers of Newest Manual

Yes, those best qualified to judge say this is the finest Leica Manual. For content, design, printing, it's tops.

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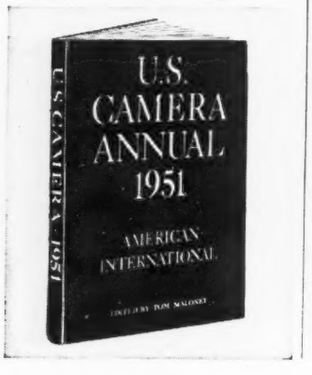

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For years IPI has made presses purr with fine printing inks. Now we have a "Purr Award"—a citation from the Empire Cat Club for best cat photo in industrial advertising.

We won the award for using a photo of that famous cat, "Tweets", asleep with a friend. The picture appeared in an IPI insert in recent graphic arts magazines. Of course the insert was printed with IPI inks which showed "Tweets" off to best advantage.

To keep your customers purring, try the new IPI Holdfast halftone blacks for true reproduction of prize photos. These are the blacks more rub and scratch resistant than ever before. They give you blacker blacks without objectionable bronzing or gloss.

Here is that photo of "Tweets" with IPI's "Purr Award" from Empire Cat Club, Incorporated, N. Y.

Advertisement

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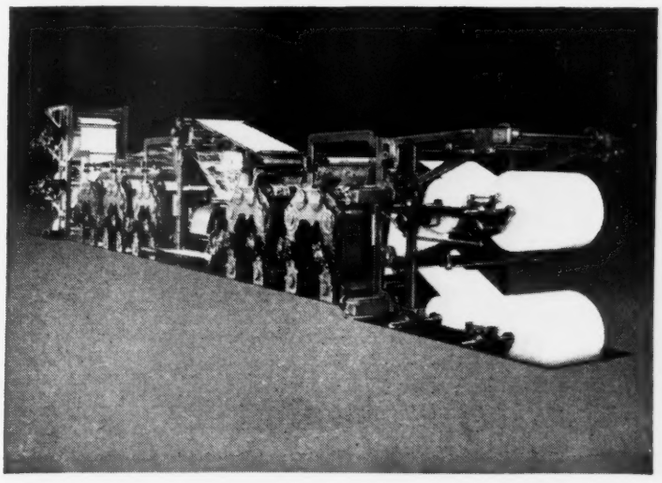

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TOUGH

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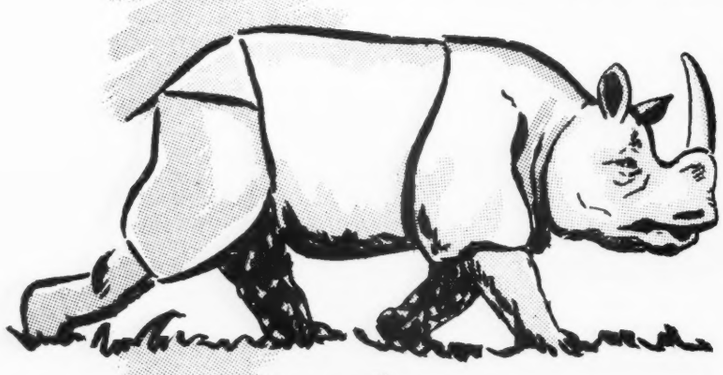

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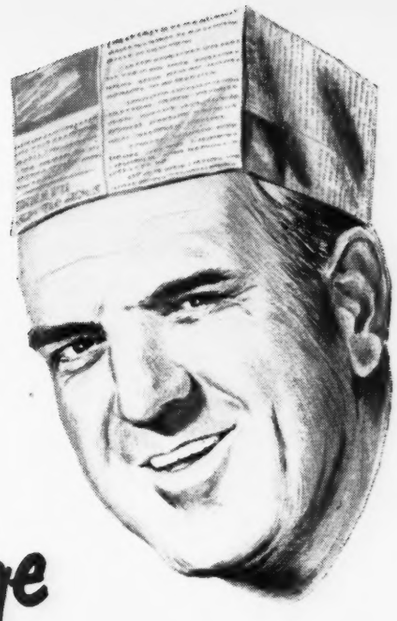

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Here's why we prefer

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★ These statements are compiled from thousands of remarks made by men who run the biggest presses in the country.

★ **RUGGED DEPENDBAILITY:** Cline Equipment can always be relied on. We've had it in our plant for years and know just what it will do and how reliable it is.

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★ **QUICK, RELIABLE SERVICE:** Cline-Westinghouse service is nation wide, from more than 40 of the biggest printing centers.

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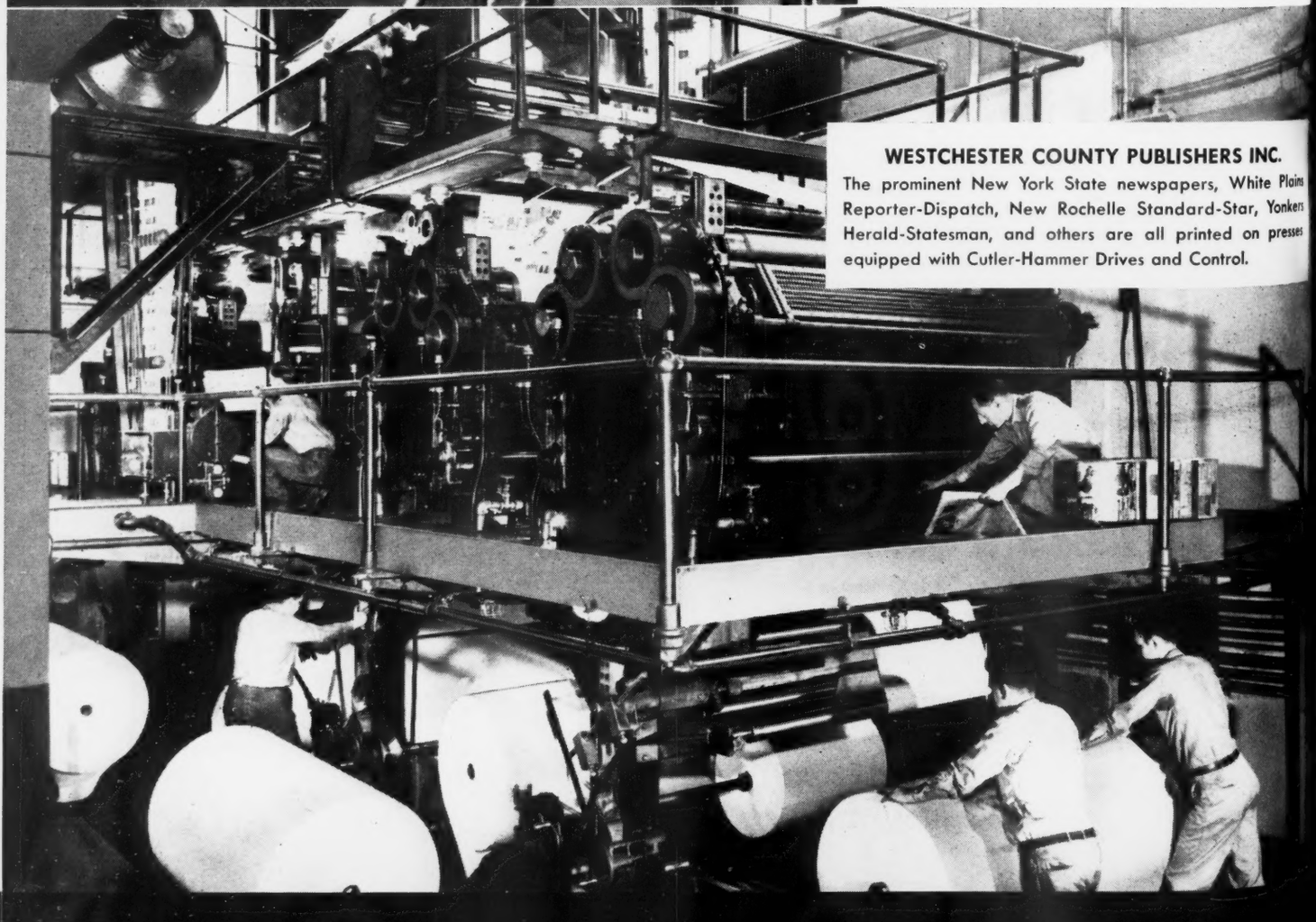
One of America's greatest newspapers, exerting an influence out of proportion to its circulation. All black and white editions of this paper are produced on the Wood Presses shown here, equipped with Cutler-Hammer Press Drives, Conveyors and Control.



WESTCHESTER COUNTY PUBLISHERS INC.

The prominent New York State newspapers, White Plains Reporter-Dispatch, New Rochelle Standard-Star, Yonkers Herald-Statesman, and others are all printed on presses equipped with Cutler-Hammer Drives and Control.

CUTLER-HAMMER PRESS DRIVES CHOICE OF PRODUCTION MINDED MEN

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Stop presses almost instantly, safely, completely relieving gearing of excessive forces and harmful shocks. Each brake individually adjustable yet is automatically coordinated with other brakes.

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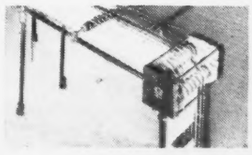

Used in practically every conveyor-equipped plant in North America. Standard Duty handles up to 56 pages at any speed up to 60,000 IPH. Heavy Duty handles up to 96 pages at any speed up to 60,000 IPH.

CUTLER-HAMMER
PRESS DRIVES
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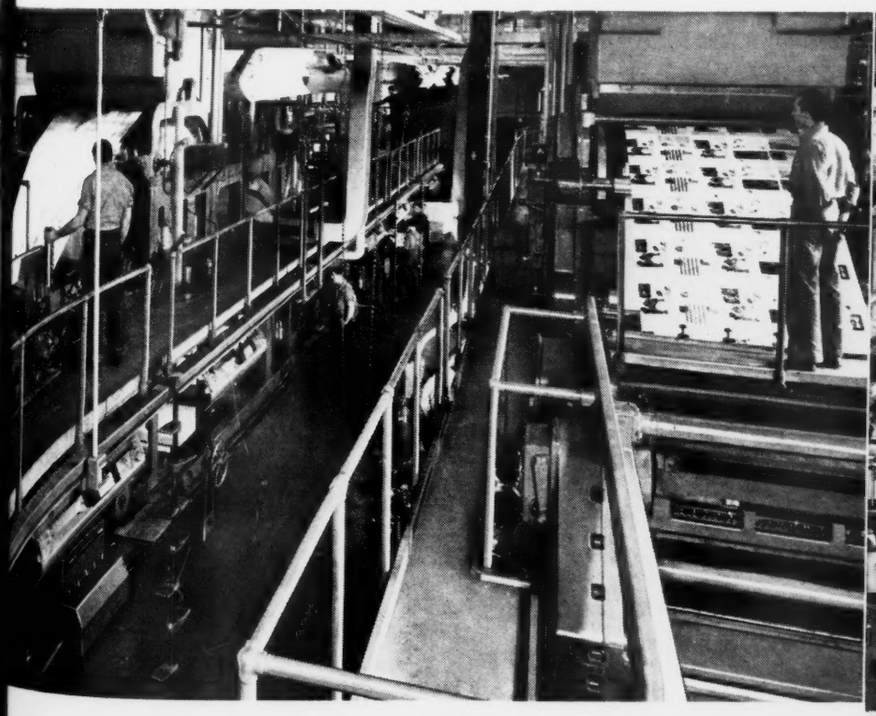

30 MILLION MAGAZINES A MONTH

The C. T. Dearing Printing Co., Louisville, Ky., produces approximately 30,000,000 copies of a dozen or more leading magazines a month on two Cottrell 10-color presses and two Goss magazine presses shown here. These four presses represent $2 million worth of precision equipment. They are completely equipped with Cutler-Hammer Drives and Control.

These glass-surfaced draws and blankets are cutting first impression offset for over 1700 newspapers.

Here's how to eliminate last-minute replating and "juggling" your make-up trying to find "preferred positions" for your advertisers. Put "SPHEREKOTE" Drawsheets or Blankets on your presses—cut offset and clean up those "muddied" first impression pages.

These drawsheets and blankets have a tough glass-beaded surface that gives clean impressions of type, solids and halftones.

That's why over 1700 newspapers have switched to "SPHEREKOTE" Drawsheets and Blankets! These papers report lower "make-good" costs, trouble-free runs—and millions of extra impressions. They're getting better printing, too, with no time wasted in the make-up and stereo departments favoring cuts and advertising.

Let us put "SPHEREKOTE" Drawsheets or Blankets on your presses. Our representatives will be glad to show you how to get better printing at lower cost—or, if you prefer, we'll mail sample swatches with complete information. Fill out the coupon today.

"SPHEREKOTE" Drawsheets, Blankets cut costs all over the plant	
Make-up	More preferred positions for cuts and advertising. Make-up moves faster, with fewer interruptions. Allows tighter papers.
Stereotype	No last-minute recasts to reposition ads or cuts which are picking up first-impression offset.
Press room	Fewer press stops for replating; no waste copies from first-impression offset.
Maintenance	Press packing with "SPHEREKOTE" Drawsheets in many cases lasts up to twice as long.
Ask for "SPHEREKOTE" Brand DRAWSHEETS—BLANKETS	

WRITE TODAY FOR COMPLETE INFORMATION!

Minnesota Mining & Mfg. Co.
Dept. PEE-41, St. Paul 6, Minn.

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Have Representative call ☐

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Company.....

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City.....Zone...State.....

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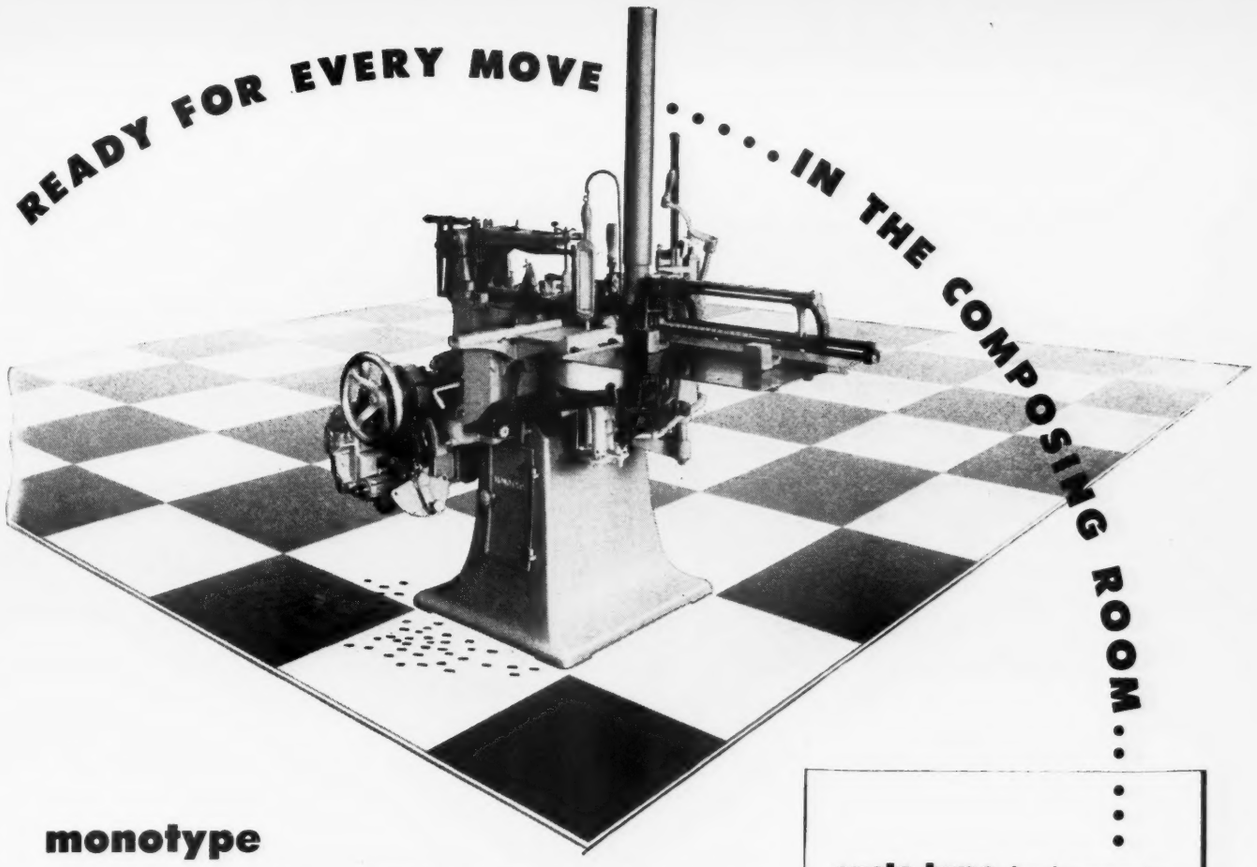
READY FOR EVERY MOVE . . . . . IN THE COMPOSING ROOM . . . . . .



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TYPE-AND-RULE CASTER

as an investment, makes possible **NON-DISTRIBUTION** . . . creates materials at low production costs . . . saves non-productive labor of distribution . . . effects economies that yield substantial dividends over the years.

THERE IS ONLY ONE monotype

LANSTON MONOTYPE MACHINE COMPANY, 24th at Locust St., Philadelphia 3, Penna.

The name MONOTYPE is a registered trade mark, and therefore the exclusive property of Lanston Monotype Machine Company, and identifies the products of this company

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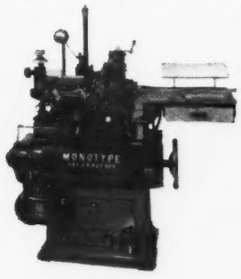
Specify MONOTYPE For the Finest in Printing



monotype GIANT CASTER

makes type and spaces, also provides metal base and precision furniture in all sizes from 14 to 72 point in continuous strips or sized to predetermined measures.

casts type for the cases in all sizes from . . .

4 to 36 point

Available for casting on the TYPE-&-RULE CASTER are more than . . .

350 type families

including Roman, Italic, and Bold, in varying weights.

ornaments may be cast from MONOTYPE matrices in sizes 5 to 36 point.

strip rules are delivered in continuous strips or cut to labor-saving lengths.

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(Set in Monotype 20th Century)

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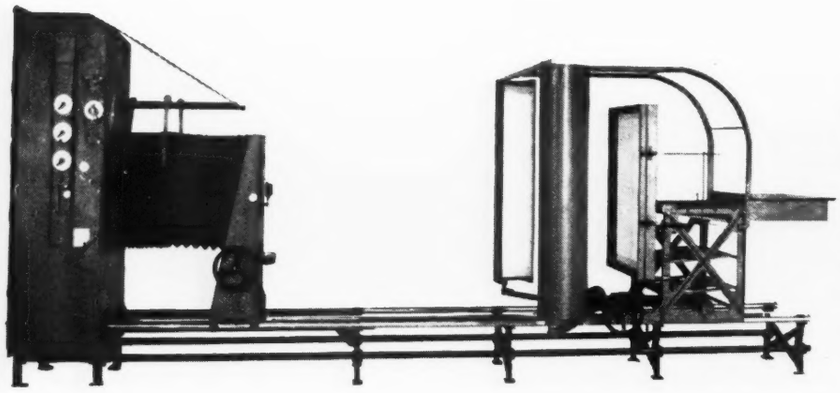

A camera that permits the operator to shoot an entire series of exposures without a single trip to the darkroom! His work is fatigue-free . . . efficient all day long.

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Wherever installed, the Chemco Model F Camera saves time, saves money . . . every day!

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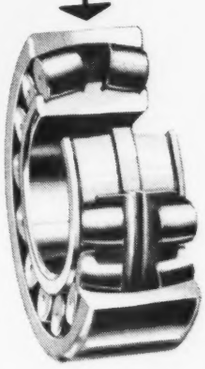
PLUS PLATE PROTECTION AT HIGH SPEEDS

. . . *that's the* BABCOCK'S "300" *rotary press*

Babcock Printing Press Corporation, of Canton, Ohio, has developed a dual purpose rotary press—the "300."* Highly efficient the "300" reduces makeready time to the minimum through the use of rubber plates. A new tension plate lockup permits up to 64 plates being mounted in a matter of minutes. In addition, it eliminates the possibility of plates buckling, warping or rupturing while the press is running at high speeds—up to 37,000 64-page signatures an hour.

Here, as in so many modern presses, SKF Self-Aligning Printing Cylinder Bearings are used. They were developed to meet demands for bearings with a large bore and relatively small outside diameter. Uniform pre-load is built into the bearings. They're accurate, easy to remove, cool in operation. They're worth looking into.



*For information on the "300" Press, write the Babcock Printing Press Corporation, 800 Waynesburg Rd., S. E., Canton, Ohio

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craftsmanship
metallurgy
tolerance control
surface finish
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field service

SKF
BALL AND ROLLER BEARINGS

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A MATRIX CONTRAST SERVICE CREW IS STATIONED *Near You!*

With service crews stationed in 19 key cities located from Coast to Coast, Matrix gives immediate attention to processing your present and newly purchased matrices.

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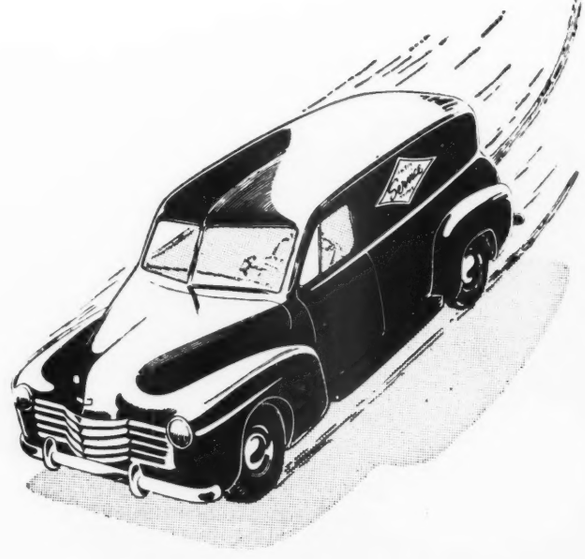
Matrix Service in White and Colors on jet black surfaces of matrices makes every reference mark *stand out* . . . thereby reducing by one-third errors in linecasting machine operation.

Write or phone our nearest office for the details on the Matrix Contrast Service Continuous Maintenance Plan. MATRIX CONTRAST CORPORATION, 154 West 14th Street, New York 11, N. Y. — 326 W. Madison Street, Chicago 6, Ill. — 1105 Trenton Street, Los Angeles 15, Calif. — Sole licensees of the Percy L. Hill Matrix Contrast Patent No. 1,796,023, other patent pending. European Agents: Funditor, Ltd., 3 Woodbridge Street, Clerkenwell Green, London, E. C. 1.



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MATRIX CONTRAST SERVICE

Good Plastic Molds for Electrotyping

By AXEL LUNDBYE
Research, Kable Printing Co., Mt. Morris, Ill.

THE major considerations in producing plastic molds for electrotyping are the proper cleaning of pattern forms and plastic molds. Also, attention must be paid to the efficiency of the acids used because the quality of the finished shells is dependent upon that efficiency.

First, we will consider the cleaning of pattern forms and plastic molds:

It is mandatory for good molds that the halftones and forms be cleaned thoroughly before molding.

A. (1) Halftone enamel should be removed if at all possible.

(2) Clean with *clean* compressed air.

(3) All proofing ink should be removed. Type wash can be used.

(4) All grease should be removed with a good solvent. It is recommended to use Mineral Spirits. However, Mineral Spirits leaves a grease deposit and should be wiped as soon as possible with Toluene or carbon tetrachloride.

B. Type forms.

(1) Remove all proofing ink (type wash). If water solvent inks are used, water, of course, is used for the wash.

(2) Submerge in sodium hydroxide (hot caustic). Then clean with low pressure steam blower nozzle (40 to 60 lb.) (This steam cleaning will have a tendency to remove most loose metal particles.) Then let them dry and they are ready for sending to molding room.

(3) After final cleaning the face should not be touched by dirt or finger prints.

C. When halftones are assembled in the blocking room, adhesive is used such as 3M stickyback or any other adhesive. Great care should be used not to get any of this adhesive on the face. Even a finger mark will be detrimental to good electrotype shells. After blocking, the original should be cleaned with Mineral Spirits and immediately wiped again with Toluene.

Should some adhesive from the 3M stickyback or any other adhesive used be left on the original and a mold is made, then it will be impossible to produce a good electrotype shell by means of silver spraying.

Normal silver spraying on the areas where the adhesive is located will take the silver, but the silver in the areas seems to be non-conductive and nickel will not adhere. If a great amount of silver is sprayed on, the silver will conduct current but the nickel will be mushy.

All the cleaning prior to halftone and type form arriving at molding room is only preliminary cleaning. Therefore, all halftones before molding should be cleaned as follows:

A system is suggested, as follows: The equipment necessary is simple and consists of two towels, three halftone brushes, and two solvents—Mineral Spirits and Toluene. The process should be as follows: Small amount of Mineral Spirits is placed on the pattern and brushed heavily to remove or break up foreign matter, such as grease and other matter. Then wipe the pattern until dry with a clean towel.

Then a small amount of Toluene is placed on the pattern and brushed heavily with a different brush than the one used for the Mineral Spirits. It is then wiped dry with another towel. The last step is to use the clean halftone brush to brush away any lint or other matter left on the pattern. The plastic should also be cleaned thoroughly with Toluene before molding.

After the Vinylchloride mold is made from a type form, many lead particles may adhere to the mold. If not removed before the shell is electroplated, these lead particles will make minute holes in the finished shell. The main reason for this phenomena is that the silver will not adhere to metallic particles and to the eye it will look like the silver is covering the mold completely. However, when the shell is removed from the mold, in every place a metallic particle has adhered to the mold, there will be a pinhole in the shell. Before silvering the mold should be submerged in a solution of Aqua Regia for not less than 15 min. nor more than 1 hr. After removing from Aqua Regia, the mold is then placed in running water and brushed and washed with soap solution and then is placed in a solution of tin chloride for not less than 5 min. Then rinse in running water and the mold is ready for the silver spray. For copper and zinc originals, the same procedure is followed except Aqua Regia is not used. But in case of new originals and where there are possibilities of loose minute particles of metal present on the originals, a nitric acid bath is used. (Never dry a silver sprayed mold with compressed air, because minute particles of oil are present in the air.)

Should the silver not cover all over, all silver should be removed. It can be removed with nitric acid and water. It will only take approx. 2 min. to remove all silver. The mold should then be washed in running water and resprayed. (Rubber gloves should be used when using Aqua Regia and nitric acid solution, as well as during silver spraying.)

Exhibit Space Reservations Being Accepted For ANPA Mechanical Conference

PRINTING EQUIPMENT *Engineer* again has been asked to handle the sales of exhibit space for the ANPA Newspaper Mechanical Conference. The Conference will be held at the Edgewater Beach Hotel, Chicago, June 11, 12 and 13. For exhibit purposes, 87 booths have been allotted. A folder containing complete and detailed information, including a plat showing the booth space areas, has been mailed to those interested in exhibiting equipment and/or supplies. Reservations are being accepted on a "first come, first served" basis. If by any chance you have not received the folder or have not made your reservation, we suggest you write, wire or phone PRINTING EQUIPMENT *Engineer*, CHerry 1-6645, 1276 W. Third St., Cleveland 13, O., at once. Advance reservations indicate that all booths will be sold in the very near future.

When molding a four and two-color subjects, care should be taken to mold all four or two colors at the same temperature, because of expansion differential of the metal. Assuming we have molds made from copper and the first mold of the four or two is made at 200 deg. F. and the second at 300 deg. F. and the mold is 15 in. long, the differential in expansion of the metal is then 0.01374 in. or the 300 deg. F. mold is that much too large. The same condition holds true for a zinc but the difference will be 0.0146 in. Using the above conditions it can readily be seen that temperature differential is very detrimental to good molding of four or two color jobs.

Raw materials and procedure in making and keeping the etching solution at proper strength are:

Hydrochloric acid
Nitric acid
Tap water

Formula

Aqua Regia—24.0° Baume
9 parts Hydrochloric acid (Muriatic acid)
3 parts nitric acid
1 part water
} Approx.

Approx. {
Nitric Acid—36.0° Baume
3 parts nitric acid
1 part water

Care Procedure

When the quantity of acids in their respective containers is considered low or the action of the nitric solution in desilvering is not efficient, proper care should be taken. These acids are important as the quality of the finished shells is determined by the efficiency of the acids.

First, consider the nitric acid. When starting with an empty container, it is a very simple procedure.

1. Pour in the desired amount of water—approx. 6 gal. (23 gal. of solution level)
2. Add the nitric acid slowly—approx. 17 gal.
3. Stir the solution very well.
4. Using 500 cc graduation cylinder, take Baume reading. Of course, use the Baume scale for heavy liquids. It should read 36.0 deg.

When the acid is considered low in the container, the following procedure should be followed:

1. Estimate the amount of solution needed to bring the acid to the proper height in the container.
2. Add the required amount of nitric acid.
3. Then add the required amount of water. Extreme care should be taken when doing this and the water should be added very carefully and slowly. Then take the Baume reading if it is lower than 36.0 deg., add more acid to bring it up to 36.0 deg. Baume. If it is higher than 36.0 deg., add more water to bring it down.

The Aqua Regia when starting with empty container: (48 gal. solution level).

1. Pour in the desired amount of water—approx. 4 gal.
2. Add the Hydrochloric acid—31 gal.
3. Add the nitric acid—13 gal.
4. Stir the solution very well.
5. Using 500 cc graduation cylinder, take Baume reading. It should read 24.0 deg. Baume.

When the acid is considered low in the container, this procedure should be followed:

1. Estimate the amount of solution needed to bring the acid to the proper height in the container.
2. Add the required amount of ingredients.
3. Baume reading should be 24.0 deg. If the reading is higher than 24.0 deg., add more water slowly. If the reading is lower than 24.0 deg. a small amount of nitric acid may be added.

Remarks

All precautions should be taken in handling these acids as to rubber gloves and masks to protect the eyes and face. Also when adding water to acid (it is a dangerous operation), the water must be added *very slowly*.

The acid containers and running water container should be handled in a ventilated enclosure with sliding doors and a drain in the bottom of the enclosure connected so that the acid resistant will discharge into the sewer.

When it is difficult to make a mold, especially from a solid halftone, the difficulty can be overcome by dipping the plastic for approx. 30 sec. in Acetone, then let dry approx. 3 to 5 min. depending on atmospheric conditions.

This procedure should be used only for very difficult molds. This procedure will also help to minimize trapped air between originals and molds.

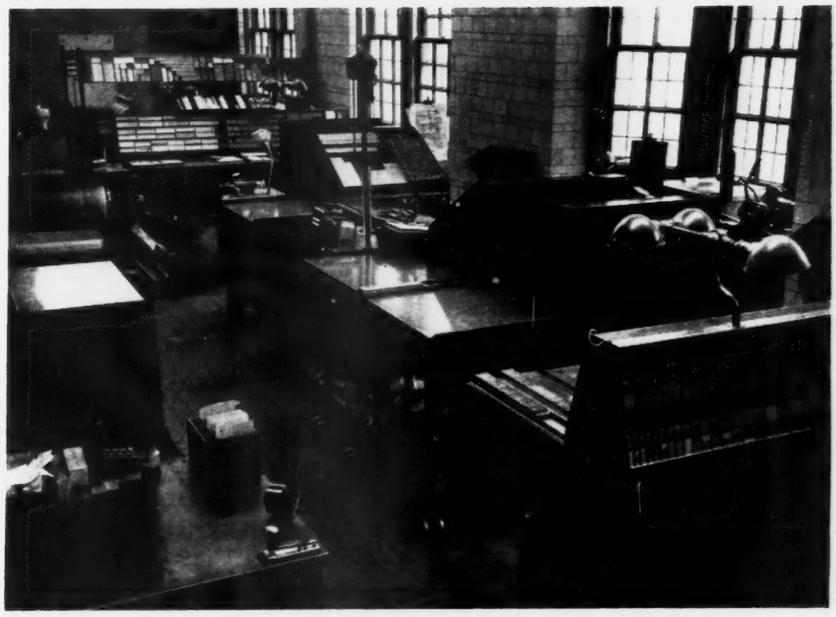
Unintentional Omission

The reference number to Herbert Products, Inc., under static eliminators and infrared sheet heaters was unintentionally omitted from the article *Essential Accessories for the Pressroom* appearing in the February 1951 issue of *Printing Equipment Engineer*. Herbert Products, Inc., manufactures static neutralizing bars, heaters and ink dryers for the pressroom.

Mobilization Committee

At the recent Mid-Winter Board Meeting, the Intl. Assoc. of Printing House Craftsmen appointed an Intl. Craftsmen Mobilization Committee. The committee will keep in touch with the proper government agencies and the Printing Industries of America headquarters in Washington, D. C., and assures its support and cooperation in all matters affecting the printing and publishing industries during the mobilization period. Craftsmen appointed to serve on the committee are as follows: John A. McLean, chairman, Perry A. Long, Phil McAteer, Gradie Oakes, Roy Brewer, Fred Bryant, Henry Laupp, and Haywood H. Hunt.

LTF Meeting—Research, educational, and service accomplishment as well as income and financial position marked the reports of committee chairmen at the recent annual members' and directors' meetings of the Lithographic Technical Foundation held in New York. It was reported that expenditures were $15 thousand less than income received and that membership increased approx. 15 per cent in the Foundation. An overall budget of $216 thousand representing an 18 per cent increase over 1949 was approved with an estimated income of $225 thousand. Shown at the meeting, standing from left to right: Wm. Hogan, Wm. Winship, C. W. Dickinson, C. W. Latham, John L. Kronenberg, Charles Shapiro, Ralph D. Cole, W. E. Griswold, Harry E. Brinkman, and George Schlegel, III. Seated from left to right: James G. Strobridge, Frank A. Myers, Miss N. Berger, Hugh R. Adams, jr., Mrs. Helen Kelley, R. E. Damon, M. H. Bruno, George C. Kindred, Felton Colwell, and John M. Wolff, jr.



A section of the composing room at the Michigan *Daily* showing the ad alley of the University of Michigan daily newspaper. Centrally located between the work banks and rolling makeup trucks is a Ludlow equipped with 60 fonts in series, of which 20 have superior figures. Situated in the bay window at the right is a Rouse Vertical Power Miterer, composing room saw, and strip material storage cabinet. A proof press at the left in the picture handles proofs of news, ads, and full-page proofs. Photo by Alan D. Reid

Completes Improvement Program

By KENNETH L. CHATTERS*

**Supt. of Printing, The Michigan* Daily.

THE recent installation of a new Goss 12 page Unitube Press at the Michigan *Daily*, student newspaper at the University of Michigan, has rounded out a program of mechanical improvement which rates it as outstanding among university newspapers of the country. Valued at half a million dollars, the building and equipment were paid for entirely by advertising and subscriptions.

In 1932, when the *Daily* moved into its present building, about a third of the equipment in the mechanical departments had been purchased second hand. Since World War II, the inauguration of a mechanical improvement program has replaced nearly all of this equipment.

Four Linotype line composing machines set the news copy for the student publication of the Ann Arbor university. These include two four-magazine Model 31s, a four-magazine 72-channel Model 33, and a two magazine Model 8. A new Linotype Comet is now on order. Three of the four Linotype machines are equipped with Mohr Lino-Saws.

Twenty-nine fonts of matrices are available for the Linotype machines, including seven duplex display fonts which minimize hand setting of foundry type.

Straight-line and ornamental rules and spacing material are produced on the Monotype Material Maker in enough quantity to supply the composing room's needs. This material is conveniently stored in a cabinet located between the composing room saw and the Rouse Vertical Power Miterer.

Equipment for the Ludlow, centrally located in the Ad Alley, includes 60 fonts in series (20 of which have superior figures) and a quadding and centering stick. The front page nameplate for the newspaper is cast from hand engraved Ludlow mats.

Rabbets have been cut into two edges of four makeup trucks as well as steel cabinets for convenience in removing ads, and retaining guards of $\frac{1}{2}$ in. angle iron installed on the sides of the trucks. Full size newspaper pages (8 col. by 21 in.) are made up on 14 trucks with space for makeup of eight additional pages on top of the letterboard ad storage cabinets.

Six of the seven dead slug bins used in the composing room were made to specification from cardboard models. An obsolete composing room saw with hard blade was retained for cutting zinc, copper and other metal plates, as well as wood base. Odd-size base and spacing material from the day's kill-off is placed near the composing room saw for re-use.

The department's maintenance force employs a 2 ft. by 3 ft. truck equipped with tools, vise, a plunger cleaner and a well cleaner for convenience, especially in the daily routine cleanup. For most maintenance jobs, the truck may be moved to the machine requiring repair, thus avoiding unnecessary chasing for repairs.

During each of the five non-publication periods during the calendar year, preventive maintenance is given full attention by following a printed check list of maintenance jobs. These lists contain the parts of the line composing machines requiring constant maintenance and include instructions for the workman on the particular operation he is working on. Another check list for the composing room includes numerous odd jobs to be performed in that department, such as oiling the saw, miterer and proofpress, filling the ink cup on the proofpress, filling kerosene and gasoline cans, etc.

The flat casting room is equipped with a bottom-pour electric remelting furnace. Water cooled ingot molds allow the Margach pigs to drop into an under-

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KENNETH L. CHATTERS

has been Supt. of Printing at the Michigan *Daily*, student newspaper for the University of Michigan, Ann Arbor, since 1932. Mr. Chatters was recently appointed Lecturer in Typography in the Dept. of Journalism by the Regents of the University. In this position, he relates the mechanical functions of a newspaper to the journalism students at the University. In addition to having attended the University of Michigan, Chatters has attended the Linotype School in San Francisco, the Monotype School in Philadelphia, and has received special instruction at the Ludlow, Linotype and Teletypesetter factories.

Equipment Layout in Mechanical Departments of the Michigan *Daily*, Student Daily Newspaper at the University of Michigan, Ann Arbor, Mich.

Composing Room

1.—Superintendent's Desk
2.—Linotype Machines
3.—News Make-up Tables
4.—Linotype Magazine Storage
5.—Linotype Dump
6.—Proof Press
7.—Machinists' Bench
8.—Proofreaders Desk

Ad Alley

9.—Monotype Material Maker
10.—Ludlow
11.—8 ft. Makeup Tables with Letterboard
12.—Ludlow Mat Cabinets
13.—Ad Cabinets
14.—Morrison Slug Stripper
15.—Power Miterer
16.—Strip Material Storage
17.—Composing Room Saw
18.—Rolling Makeup Tables
19.—Ad Cabinets
20.—Cut Storage
21.—Storage Cabinets for Strip Material
22.—Storage Cupboard

Stereo Dept.

23.—Mat Roller
24.—Vacuum Scorcher
25.—Electric Remelting Furnace
26.—Vacuum Casting Box
27.—Plate Finishing Machine
28.—Curved Plate Router

Flat Casting Room

29.—Mat Scorcher
30.—Vacuum Casting Box
31.—Electric Remelting Furnace
32.—Plate Shaver
33.—Router
34.—Plate Saw
35.—Work Bench

Pressroom

36.—Goss Unitube Press
37.—Newspaper Press Motor
38.—Paper Storage
39.—Delivery Room
40.—Photo Darkroom
41.—Store Room
42.—Men's Toilets
43.—Women's Toilet
44.—Telephone
45.—Dock

slung truck which is hauled directly to the composing machines for unloading. Plate finishing is handled on a large saw for rough cutting, a Hammond Glider Stereo Saw, a radial router, and a new Goss Flat-Plate Shaver.

Base for Fairchild plastic engravings is also made on the flat plate shaver, is trimmed and stored according to column widths. Base for national advertising plates is made by placing the plastic or stereo cut face down, placing the metal base on top of it, and trimming to type high. Linotype metal is used for everything except the curved plates for the press which use stereo metal. Fairchild plastic engravings are matted with satisfactory printing results. As many as 25 such engravings are used in a single issue. The *Daily* was among the first newspapers in the country to install a Fairchild Scan-a-graver machine.

Stereotype department equipment includes an electric remelting furnace, vacuum casting box, vacuum scorcher, tubular plate finishing machine, and curved plate router.

Features of the new Goss press installation include web-break detectors, overhead paper roll hoist, and ink pumped directly to the fountains from a 1000 gal. ink storage tank.

The new Goss 12 page Unitube Press recently installed at the Michigan *Daily* has rounded out a program of mechanical improvement which rates it as outstanding among university newspapers of the country. The press is equipped with web-break detectors, overhead paper roll hoist, and ink pumped directly to the fountains from a 1000 gal. ink storage tank. Part of the stereotype department can be seen at the left in the photo showing the plate finishing machine, electric remelting furnace, vacuum scorcher, and vacuum casting box.

Photo by Alan D. Reid

Odd Jobs For Vacation Periods

The following check list is one of the maintenance schedules used in the composing room of the Michigan *Daily*, student newspaper at the University of Michigan. During each of the five non-publication periods of the daily newspaper during the calendar year, employees follow such a schedule to minimize down time during productive periods.

- ☐ Polish all the type cabinets and Elrod storage cabinets.
- ☐ Check all cases to see that spacing material boxes are full
- ☐ Clean off the letterboards with kerosene or gasoline.
- ☐ Polish the saw, miterer and proofpress.
- ☐ Oil the saw, miterer and proofpress.
- ☐ Clean the Ludlow and cabinets.
- ☐ New tympan on proofpress.
- ☐ Put clean rags in the proofpress and in the receptacles provided.
- ☐ Wash brayer and ink plate on proofpress.
- ☐ Fill ink cup on proofpress.
- ☐ Check accuracy of saw and miterer.
- ☐ Clean and enamel underneath the overhead banks. (Gibson's Soap polish).
- ☐ Fill all lead and slug racks, including the overhead make-up banks.
- ☐ Put new head rules and running heads in all chases.
- ☐ Run off proofs of any forms needed for the shop.
- ☐ Clean hand marks off the composing room walls, posts, and doors.
- ☐ Wash all the spacebands in gasoline or naphtha and graphite or put into the heavy non-rust lubricant provided.
- ☐ Flatten the spaceband block, using emery cloth or sandpaper.
- ☐ Melt out the dross accumulation in the stereotype room. Put the pigs from this dross metal in a *separate* pile near the Elrod, so that they will be *sure* to go through the Elrod and will not be taken from the Elrod for use on the Linotypes. When remelting, use plenty of Flux Stanlite, Adjustaflux or potatoes to insure clean metal. Never pour off a batch of pigs without first agitating the metal for at least *10* minutes.
- ☐ Oil all the motors in the stereotype room: fan, saws, router.
- ☐ Fill kerosene and gasoline cans.
- ☐ Kill off all dead ads.
- ☐ Replace all worn-out light bulbs.
- ☐ Clean, polish and oil all the turtles.
- ☐ Clean, polish and oil the dump trucks.
- ☐ Replenish the supply of casting "tails," gummed paper tape, backing-up paper, 1 in. cardboard strips, Adjustaflux, Flux Stanlite.
- ☐ Return news and ad mats to upstairs.
- ☐ Return all news cuts to the storage cabinets.
- ☐ See about work on the press.
- ☐ At all times, make notes of any improvements you may think of.

Communication between the mechanical departments is handled by means of signal lights, buzzers and inter-office telephones. Copy is bought to the composing room by dumbwaiters from the editorial offices located on the second floor.

Walls in all rooms in the plant are tiled, ceilings are sound deadened, diffused fluorescent lighting is used and the floors are of wood block. Heat, electricity, hot and cold water, and compressed air are furnished by the central University power plant.

The mechanical departments employ regularly full-time journeymen printers, while the business and editorial staffs of the newspaper are manned 100 per cent by Michigan University students. The *Daily* has frequently been awarded the rating of *Pacemaker* among university newspapers for typographic excellence and topnotch news coverage.

Cleveland Agency

Mergenthaler Linotype Co. recently opened a new branch in Cleveland, headed by Charles J. (Barney) Borntraeger. The agency, located at 2536 St. Clair Ave., will carry replacement parts and matrices and will serve Linotype customers in Ohio, and parts of Michigan, Indiana, Kentucky, West Virginia, Pennsylvania, Maryland and New York. In addition to Manager Borntraeger, personnel permanently located at the Cleveland agency includes William J. Butler, in charge of sales service, and Norman A. White, who heads the parts department. Borntraeger has been associated with Mergenthaler since 1945, previously serving as a production engineer covering Iowa and part of Nebraska. He has also served with the Louisville (Ky.) *Evening Post*, Palm Beach (Fla.) *Times*, Indianapolis (Ind.) *News* and Toledo (O.) *Blade* in various capacities.

Increased Newspaper Production Costs

(Summary of an address delivered by John R. Copeland, Production Manager, Minneapolis *Star* and *Tribune*, before the Northwest Newspaper Mechanical Conference, Minneapolis, February 1951.)

THE American newspaper business faces one of the most threatening problems in its 260 year history. Publishers are selling more papers and taking in more money than ever before, but newspapers are going out of business faster than they have ever gone out of business before. Since 1929, dailies have been closing up shop at an average of almost three a month. It was disclosed that 714 daily newspapers, 40 per cent of the papers now publishing, have failed or have been absorbed by other papers. Weeklies and semi-weeklies are disappearing even more rapidly. Some 1700 newspapers of this type have closed their doors in the last three years.

Increased costs have completely outstripped any increase in revenue in the postwar period, despite the fantastic growth in advertising volume and circulation revenue, according to statistics reported by *Editor and Publisher*.

In 1947 revenue was up 24 percent over 1946, but costs were up 28 per cent. In 1948 revenue was up 15 per cent over 1947, but costs were up 20 per cent. In 1949 revenues were up 8 per cent over 1948, but costs were up 10 per cent. Through 1950 costs have continued to rise faster than revenue for all newspapers, large and small, dailies and weeklies. Just how long newspapers can survive is a matter of speculation. Some are already in the red. Consequently any decline in revenue would be fatal.

A score or more of daily newspapers could stand no more than a 5 per cent drop in advertising if costs were to remain at 1950 levels. A drop of 10 per cent would eliminate possibly 100 dailies and a drop of 20 per cent could destroy the entire industry, unless heroic measures are taken.

As the margin narrows, more and more papers are going into the red and there are not too many publishers who will keep on investing more money back in, especially when they can see still higher costs and lower advertising lineage in the offing.

Increased circulation revenue is questionable. For instance, if we were to raise our daily single copy price beyond five cents we would price ourselves out of the mass circulation market. How much publishers may increase their advertising rates depends, naturally, on how much advertisers will stand without decreasing their volume.

Newsprint manufacturers can get more for wood pulp than they are currently getting for newsprint. Wood pulp brings $120 a ton, whereas newsprint is currently selling at $107. Is this situation going to cause paper mills to increase their newsprint production facilities? No, I am afraid not. More and more of their ca-

pacity will be diverted to other paper products.

In one sense we should actually welcome an increase in the price of newsprint so the mills would increase instead of decrease the manufacture of newsprint.

But that would further increase our costs. We would be forced to further increase our advertising rates. More advertising dollars would be diverted to other advertising media such as radio, television, billboards, car cards, etc.

Of course as advertising dollars decrease, profits decrease. But for us sitting here today, the situation is much more serious than that appearing on the boss' profit and loss statement. Maybe some of our publishers can get by with smaller profits. I know many are on the verge of throwing in the sponge and calling it quits. I predict you will see more newspapers suspend publication or consolidate in the next 12 months than have ever folded in a like period of time.

As advertising rates are raised to meet higher production costs, advertising volume will drop and newspaper mechanical department jobs will decrease as the number of pages printed falls. Yet, the situation is not entirely hopeless. Newspapers can yet prosper and newspaper employees be in demand if those in the production department are smart and reduce costs by eliminating wasteful practices and creating greater efficiency.

Prevention of paper waste should be one of the first considerations, and this can also be aided by departmental contests to eliminate waste. He suggested that the reduction of roll size by use of higher shrinkage mats or plastic blanket molding might also reduce paper consumption. Costs might also be reduced by conserving zinc and other metals, by improving equipment and working conditions and promoting team work.

One way in which the diversion of newspaper advertising dollars to other media might be prevented, Mr. Copeland suggested, is in improving the quality of the newspaper printing to make the paper more attractive, more appealing, and thus increase the pulling power of newspaper advertising.

The salvation of the newspaper industry rests in disregard for old methods, established procedures and even the total discard of reproduction principles that date back five centuries, and acceptance of photographic and electronic principles of 1950. He urged newspaper production men to learn more about new methods, new machines and new ways of doing things better and faster and cheaper.

In conclusion, Copeland advised foremen who have a proposal for saving money, increasing efficiency, improving the quality of the paper to avoid putting that proposal to the boss verbally. Write it down, step by step. Sleep over it, and then if it looks good, type it out and give it to the boss. In writing it down, he said, cover these points: what you propose, why you want it, what it will accomplish, and what it will cost.

NPA
Printing and Publishing Division

IT WAS recently announced that Arthur R. Treanor has been appointed Director of the NPA Printing and Publishing Div., and Donald G. Shook, acting director since January, has been appointed Deputy Director. Col. E. W. Palmer, President of Kingsport Press, Kingsport, Tenn., remains in the capacity of Consultant to the Division. Treanor formerly was vice president, director, and labor consultant for the Booth Newspapers in Michigan for more than 30 years.

Paper for Government Orders

The printing industry now has reasonable assurance that paper will be available for DO rated (Defense Order) printing received from the Government Printing Office or a defense agency. Under a recent NPA order, paper manufacturers are required to set aside from 5 to 10 per cent of various grades of paper to fill such defense orders. This means that 90 per cent of printing paper production and 95 per cent of newsprint and groundwood paper production will still remain available to fill private orders, plus any unused portions of the reserves set aside for government orders.

Use of Metal Partitions

Under an amendment to NPA Order M-4, which prohibits the construction of printing and other establishments without NPA authorization, permission must first be obtained from NPA if partitions made in whole or in part of metal are to be used in any construction project. Alterations and additions to office and loft buildings are permitted under the amended order, at a cost not to exceed 25 cents per sq. ft. of the occupied space.

GPO Printing Contracts

Authority to negotiate prices for printing and lithographing has been received by the Government Printing Office and standard-rate contracts in use during the last war will be introduced again. Under the new procedure, a qualified printer who signs a standard-rate contract may obtain a GPO order on standard rates, which are published as part of the contract form.

Printing firms desiring GPO work must send in Questionnaire Form No. 2524 which may be obtained by written request to the Director of Purchases, U. S. Government Printing Office, Washington 25, D. C. Work will be offered on a rotating basis in various distribution areas to printers and lithographers who have signed these contracts.

Bronze Powder Available

Bronze powder is available for use in the printing industry, according to amended NPA Order M-12, providing it is suitable for use in articles not prohibited in the original order such as repair parts. An exception is made in the case of its use in the printing industry where bronze ink and powders are an integral part of product identification.

Operating Supplies Liberalized

Liberalization of the defense order priorities system which will enable printers and lithographers to obtain operating supplies has been extended through the issuance of NPA Regulation No. 4. The order also applies to customers of printers and lithographers in purchasing printing items considered operating supplies.

Such operating supplies may be obtained by marking purchase orders with the symbols DO-97, and it will, within quota limitations, be rated on the same level as defense orders issued by the government. This regulation applies to maintenance, repair and operating supplies, as well as to minor capital additions, such as small items of plant equipment, none of which may exceed $750 in cost.

Approves Toll Fabrication of Unusable Aluminum Plates

On April 4, NPA advised the Lithographers National Assoc. that on the basis of its petition on behalf of the lithographic industry blanket approval has been granted for the industry to continue its long-standing arrangement with the Aluminum Co. of America for the toll fabrication of unusable aluminum lithographic plates.

Wording of the approval reads as follows: "The lithographers are authorized to send their unusable litho plates to Graphic Arts jobbers as has been their practice in the past. Such jobbers are authorized in turn to toll such plates with the Aluminum Co. of America and receive in return an equivalent of new plates by weight."

Please take a look at your address on the wrapper in which *Printing Equipment Engineer* is sent to you at your place of employment. If it isn't correct, please tell us about it on a postcard.

Installs Scott Press

The installation of a six-unit Scott Newspaper Press will be made this summer in the plant of Fairchild Publications, Inc., New York. According to Edgar W. B. Fairchild, Vice President and Treasurer of the company, the new press will be equipped with high speed folders, reels and an electronic drive. The press is designed to turn out a 192 page tabloid size newspaper in one run.

Conference Dates *(with organization names and principal officers)*

American Photoengravers Association — 1951 Convention, Netherland Plaza Hotel, Cincinnati, O., October. W. K. James, President; Frank J. Schreiber, Executive Secretary, 166 W. Van Buren St., Chicago 4, Ill.

ANPA Mechanical Conference—1951 Conference, Edgewater Beach Hotel, Chicago, June 11, 12 and 13. Chairman of the Committee, L. J. Griner, Production Manager, Detroit *News*. Manager ANPA Mechanical Dept., Vernon R. Spitaleri, 370 Lexington Ave., New York 17, N. Y.

Fifth District Craftsmen's Conference — 1951 Conference, Claypool Hotel, Indianapolis, Ind., June 15 and 16. President, J. H. Clendenin, Indianapolis Blue Print Co., Inc., 600 E. Ohio St., Indianapolis, Ind.; Secretary-Treasurer, Robert Wolf, Richardson-Taylor-Globe Co., 4501 Mitchell Ave., Cincinnati 32, O.

Great Lakes Newspaper Mechanical Conference—1952 Conference, Hotel Statler, Detroit, January 13, 14 and 15. President, Joseph E. McMullen, Asst. Production Manager, Milwaukee (Wis.) *Journal;* Secretary, Don Clark, Stereotype Supt., Grand Rapids (Mich.) *Press;* Chairman, Mfrs. and Suppliers Committee, Edgar Flint, Howard Flint Ink Co., Clark Ave. & M.C.R.R., Detroit 9, Mich.

Illinois Newspaper Mechanical Conference—1951 Conference, Hotel Kaskaskia, LaSalle, Ill., September 22 and 23. President, John Barron, La Salle (Ill.) *News-Tribune;* Secretary-Treasurer, Wilbur L. Augspurger, Peoria (Ill.) Newspapers, Inc.

Intl. Assoc. Electrotypers & Stereotypers — 1951 Convention, Kenmore Hotel, Boston, Mass, October 23, 24 and 25. 1951 Spring Conference, Hotel Cleveland, Cleveland, April 12 and 13. A. P. Schloegel, Executive Secretary, 701 Leader Bldg., Cleveland 14, O.

International Association of Printing House Craftsmen—1951 Convention, Statler Hotel, Boston, Mass., August 19, 20, 21 and 22. President, Fred C. Baillie, 21 Iona, Ottawa, Can.; Executive Secretary, Pearl E. Oldt, 18 E. Fourth St., Cincinnati 2, Ohio.

International Graphic Arts Education Association—1951 Conference, Hotel Statler, Cleveland, O., June 17, 18, 19 and 20. President, George J. Bilsey, East High School, Cleveland, O.; Educational Director, Fred J. Hartman, 719 Fifteenth St., N. W., Washington 5, D. C.

International Typographic Composition Association—1951 Convention, Hotel Windsor, Montreal, Can., September 13, 14 and 15. President, O. B. Powell, General Manager, A-1 Composition Co., 155 E. Ohio St., Chicago; Frank M. Sherman, Executive Director, 1015 Chestnut St., Philadelphia 7, Pa.

Iowa Daily Newspaper Mechanical Conference — 1951 Conference, Hotel Montrose, Cedar Rapids, Iowa, May 5, 6 and 7. President, L. T. Caldwell, Stereo Supt., Cedar Rapids (Ia.) *Gazette;* Secretary-Treasurer, Paul F. Kamler, Mechanical Supt., Clinton, (Ia.) *Herald.*

Kansas Newspaper Mechanical Conference — 1951 Conference, Broadview Hotel, Wichita, Kan., September 15 and 16. President, Glenn Cummins, Wichita (Kan.) *Eagle;* Secretary-Treasurer, Larry Miller, 701 Jackson St., Topeka, Kan.

Lithographers National Association—1951 Convention, Spring Lake, N. J., during the week starting June 25. Executive Director, W. Floyd Maxwell, 420 Lexington Ave., New York 17, N. Y.

Mid-Atlantic Mechanical Conference — Conference Director, Theodore A. Serrill, PNPA Manager, Telegraph Bldg., Harrisburg, Pa.

Missouri Newspaper Mechanical Conference — 1951 Conference, Bothwell Hotel, Sedalia, Mo., October 20 and 21. President, Earl H. Barker, Composing Room Foreman, St. Louis (Mo.) *Star-Times;* Secretary-Treasurer, O. K. Hammitt, Mechanical Supt., Moberly (Mo.) *Monitor-Index.*

National Association of Litho Clubs — 1951 Convention, Hotel Cleveland, Cleveland, O., May 11 and 12. General Convention Chairman, Herb Johnson, A. S. Gilman, Inc., 623 St. Clair Ave., N. E., Cleveland, O. Executive Secretary, William J. O'Holleran, Assistant Supt., Myercord Co., 5339 W. Lake St., Chicago 44, Ill.

National Association of Photo-Lithographers — 1951 Convention, Statler Hotel, Buffalo, N. Y., September 5, 6, 7 and 8. Executive Vice President, Walter E. Soderstrom, 317 West 45th St., New York 19, N. Y.

National Printing Equipment Association, Inc. — President, R. Verne Mitchell, Harris-Seybold Co., 4510 E. 71st St., Cleveland 5, O.; James E. Bennet, Secretary, 140 Nassau St., New York 7, N. Y.

New England Mechanical Conference — 1951 Conference, Statler Hotel, Boston, November 3 and 4. President, Howard E. Simons, Waterbury (Conn.) *American-Republican;* Secretary-Treasurer, Walter C. Crighton, Comp. Room Supt., New London (Conn.) *Day.*

Northwest Mechanical Conference — 1952 Conference, Hotel Duluth, Duluth, Minn., September 20, 21 and 22. President, John Breen, Mechanical Supt., Duluth, (Minn.) *Herald* and *News-Tribune;* Secretary-Treasurer, Ralph Carson, Dunwoody Industrial Institute, Minneapolis, Minn.

Pacific Mechanical Conference —1951 Conference tentatively set for Biltmore Hotel, Los Angeles, May 18, 19 and 20. President, L. M. Richardson, Mechanical Supt., Los Angeles *Herald-Express;* Secretary for the North, Edw. N. Conley, color press foreman, San Francisco *Chronicle;* Secretary for the South, Fred J. Moyer, Los Angeles *Daily News.*

Pacific Society of Printing House Craftsmen—1951 Convention, Hotel Westward Ho, Phoenix, Ariz., May 10, 11 and 12. President, Allison W. Manners, 4137 Fifth Ave., Los Angeles 43, Calif.; Secretary-Treasurer, Isadore Margolin, 8924 S. Gremmercy Pl., Los Angeles 44, Calif.

Printing Industry of America — 1951 Convention, Hotel Statler, Boston, October 24, 25, 26 and 27. President, Robert H. Caffee, President, Wm. G. Johnston Co., Pittsburgh, Pa.; James R. Brackett, General Manager, 719 Fifteenth St., N. W., Washington, D. C.

Research and Engineering Council *of the Graphic Arts Industry, Inc.*—President, Frank F. Pfeiffer, Reynolds & Reynolds Co., 800 Germantown Ave., Dayton, O.; Official Headquarters, Bernard Taymans, 719 Fifteenth St., N. W., Washington 5, D. C.

SNPA (Eastern Div.) Mechanical Conference—1951 Conference, Atlanta Biltmore Hotel, Atlanta, Ga., August 27 and 28. Chairman, L. H. Pickens, Mechanical Supt., Greenville (S.C.) *News-Piedmont;* Secretary, Tom Tanner, c/o SNPA, P. O. Box 1569, Chattanooga 1, Tenn.

SNPA (Western Div.) Mechanical Conference—Chairman, Ralph Moffett, Mechanical Supt., Dallas (Tex.) *Times-Herald;* Conference Secretary Pro Tem, Mike Murray, 621 Texas Bank Bldg., Dallas 2, Tex.

Technical Association of the Lithographic Industry — (TALI)—1951 Meeting, Deshler-Wallick Hotel, Columbus, O., May 7 and 8. President, Dr. Marvin C. Rogers, Research Director, R. R. Donnelley & Sons Co., 350 E. 22nd St., Chicago; Secretary-Treasurer, Geo. W. Wilhelm, 814 N. East Ave., Oak Park, Ill.

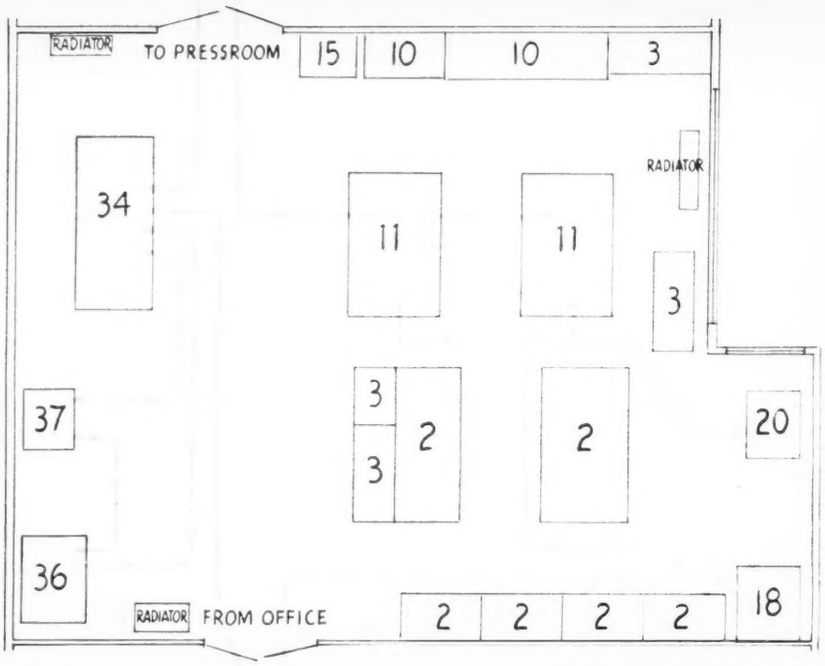


Fig. 1.—Composing room workflow before rearrangement of equipment in the plant of Edw. T. Samuel, Printers, Cleveland, O. Extended work lines and excessive backtracking are noticeable in this diagram as the work proceeds from the office through the department into the pressroom. It can be seen that nearly one-third of the space is occupied by the bindery, which causes a confused workflow as jobs move back from the pressroom into this part of the bindery and then to the shipping dock. Location of certain items of equipment meant unnecessary footwork for the workers.

Planning Improves Workflow In Commercial Composing Room

MAXIMUM utilization of available space within the plant is the essence of a well planned departmental layout, smooth workflow and coordinated production, according to Edward T. Samuel, Owner of Edw. T. Samuel, Printers, a Cleveland, O., printing plant. Overcrowding of equipment, inadequate working areas and backtracking of workflow within composing rooms are often the underlying factors behind the printing plant executive's statement, "We lose money in our composing room."

Acknowledgement of such conditions continually provokes the production and mechanical executive, and harasses his efforts towards maximum production. With these thoughts in mind, Mr. Samuel set the wheels in motion in an effort to revamp the layout and workflow of the composing room. In order to have authoritative answers for the problems at hand, a printing engineer was called in and consulted about ways and means of improvement.

Now, to begin with, the Samuel plant is not a large one. Facilities, especially floor space, are limited. The number employed totals seven, three of whom work in the composing room. Although the firm specializes in school yearbooks, a variety of commercial work is handled as well. Included are folders, catalogs, office forms, advertising literature, booklets, etc.

The largest percentage of the composition is machine-set by a typesetting plant. Display matter is hand-set from foundry type faces. The selection extends from 8 pt. to 96 pt., plus a variety of wood type for certain jobs.

The problems existing in the composing room were numerous and perhaps similar in nature to those experienced by the same department in other plants. The faulty lines a job followed before the rearrangement started can be seen in Fig. 1.

In many instances, it meant backtracking for the workers in reaching materials or equipment used on nearly every job. An example of this is the location in Fig. 1 of the saw (No. 18) and the proof press (No. 20). It also meant more steps and consequently more time consumed as the compositors and makeup men traveled to and from such equipment.

The narrow aisles and alleys presented still another problem. Their width was not sufficient for more than one person to work in or more than one truck to be moved freely between the confines of the type cabinets, imposing tables or storage cabinets.

Added to this was a section of the bindery which occupied nearly one-third of the department's space. A bindery table, paper drill and stitcher made a confused workflow as jobs moved back from the pressroom, into this part of the bindery and to the shipping dock.

This, briefly, was the situation faced in this plant and one that is gradually being overcome by replacement and rearrangement of equipment. Mr. Samuel acknowledges that it is not an operation which can be carried out overnight and it is one which will incur some expense in replacing obsolete or worn-out equipment.

It is an operation, too, in which the employee should be consulted as well as seeking advice from a professional source. The Cleveland plant owner tells how he made a layout of the equipment arrangement and then called his workers together for a meeting, explaining what was to take place and asking for suggestions on how some of the problems could be solved. He believes that reliance on the suggestions and thinking of the workers creates interest among the employees, provides teamwork within the shop and plays an important role in obtaining a smooth workflow in any department.

Equipment Evaluation

Evaluation of the equipment on hand was one of the first steps taken in revamping the composing room. Certain items were replaced and others added if the need necessitated such additions. The equipment consists of type, galley and cut storage cabinets, hand proof press, composing room saw, imposing tables and chase racks. A study of the equipment and the present needs of the department resulted in the addition of a Hamilton Galley Storage Cabinet; Hamilton Lead, Slug and Rule Cabinet; Pioneer-Toledo Saw, and a Universal Mono-Tabular Broach.

As the number of employees in the composing room increased, ways and means had to be found to provide ample working space for the additional men. This meant, also, that the workflow would have to be revised to include the additional space to be occupied by the workers.

Examination of the layout disclosed a great deal of space devoted to equipment which belonged in the bindery. It was decided to move this equipment out into the bindery, thereby providing the additional space for expansion so badly needed in the composing room.

Remove Bindery Equipment

As shown in the after arrangement of the department (Fig. 2), it was now possible to shift work frames, a space and quad storage cabinet and a foreman's desk into the space provided by the removal of the bindery equipment. Though this change has not been fully executed, the final result will enhance the area available to the composing room workers as compared to the layout in Fig. 1. Workflow lines will follow a straight course through the department and confusion will be minimized.

To start the work through the department in an organized manner, a foreman's desk was installed and located near the office (Fig. 2) to receive jobs as they entered the composing room. The saw and proof press were moved, per-

1—Foreman's desk
2—Type cabinet
3—Galley cabinet
4—Letterboard cabinet
7—Space and quad storage cabinet
10—Cut or mat storage cabinet
11—Imposing table
15—Chase rack
18—Saw
20—Proof press
34—Bindery or paper cutter table
36—Paper drill or punch
37—Stitcher

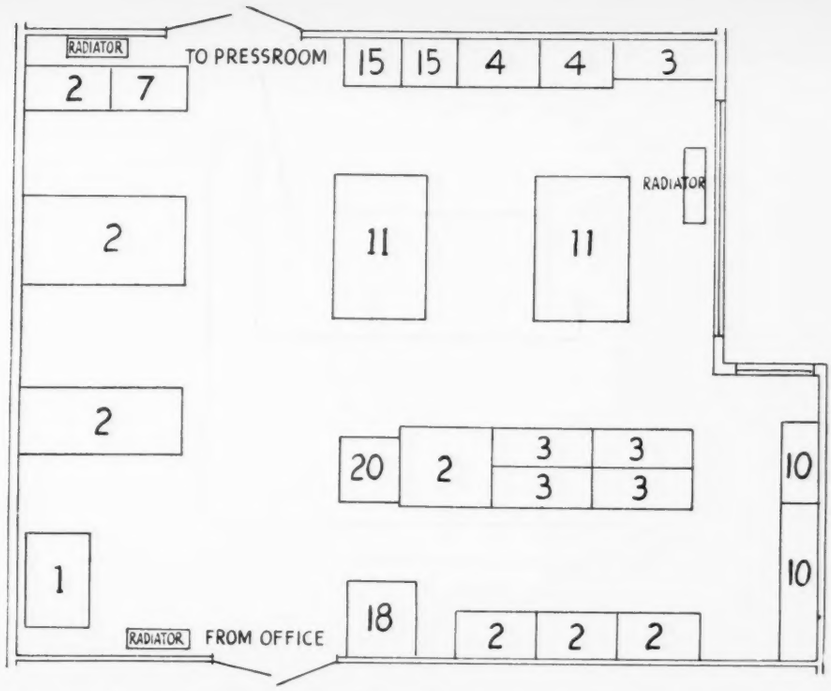


Fig. 2.—Composing room workflow after planning rearrangement of equipment in the plant of Edw. T. Samuel, Printers, Cleveland, O. Costly backtracking will be eliminated by careful planning with respect to the location of equipment. The bindery equipment has been moved out into the bindery department, resulting in increased floor space for the composing room. It was possible to shift composing room equipment into the spaces vacated by the bindery equipment and accomplish straight line production. Aisle and alley widths were also increased to accommodate two men working at the same time within an alley and two trucks to pass one another within the confines of the aisle.

As is the case with most composing rooms in which the equipment is to be rearranged, limitations were imposed by the floor space available. This is the interesting element in plant planning because no two plants are exactly alike.

mitting greater access to these working tools for the compositors.

Aisles Widths Doubled

Aisle widths were another problem in revamping the layout. Allowances had to be made to provide ample space for uninterrupted movement of men and material between the type cases, cabinets and tables. Space, however, was still at a premium, so the width of aisles and alleys had to be carefully judged to accommodate the workflow and still be adequate.

It was decided to double the normal work load of the aisle or alley in determining its width. In other words, instead of providing room for one man to work in the alley or for one truck to move down the aisle, sufficient space was allotted for two men to work at the same time or two trucks to pass one another within the confines of the aisle. This meant widening the aisles to 66 in. and alleys between workframes and cabinets to 44 in.

The increased aisle and alley widths are noticeable in Fig. 2 as compared to the layout in Fig. 1. When the final change has been completed in the composing room, the wider aisles and alleys will effect a smoother operating department and result in a more pleasant working environment.

Most composing rooms have material, cut and form storage problems, and the Samuel plant is no exception to the rule. As business volume of the firm increases, a similar trend follows in the storage of these items. This was a problem Mr. Samuel had to meet and solve without using up any of the available floor space.

It was noted that as the work of improving the layout progressed, the revision was reaching its limits of the space at hand. To add any additional major equipment to the floor space in an effort to alleviate the storage situation, meant a return to the condition similar to that which was experienced before.

Floor Space Conservation

Remembering the modern expression, *The air is yours*, Mr. Samuel utilized just that. He went up—by placing equipment on top of other equipment. Half-size galley cabinets went on top of full-size galley cabinets. Various material storage and cut storage cabinets were also placed on top of one another. This move gave the composing room the facilities for maintaining an organized department for this material and enabled accurate records to be kept on the location of standing forms and cuts.

Because of the peculiar range of work, self-devised work aids were employed to some extent in the composing room. These work aids not only have meant greater efficiency in production, but also have a direct bearing on the solution to the storage problem. Included are racks for pre-cut leads and slugs, odd lengths of wood furniture, and separate compartments for various line spacing material. Mr. Samuel explains that these were installed to enable the compositors and makeup men to have pre-cut material available within arm's reach and to reduce costly backtracking when working on the majority of jobs in the shop.

Many of these work aids reflect the ingenuity of Mr. Samuel and his employees. Others are based upon ideas originating in a number of composing rooms.

Expediting Makeup

To expedite making up forms for the pressroom, odd sizes of material are precut and stored in specially built racks conveniently located over the work frames or adjacent to type cases and storage cabinets. Standard sizes of wood furniture have been sawed into odd sizes ahead of time. For example, from 10 pica lengths of wood furniture of various widths, the following sizes have been cut: —2 picas by 9 picas—3 picas by 9 picas—4 picas by 9 picas—5 picas by 9 picas, etc.; Also, 2 picas by 8 picas—3 picas by 8 picas—4 picas by 8 picas, etc.

This idea is carried out to the extent that the makeup men will be provided with other odd sizes such as 11 picas and 13 pica lengths of furniture in various widths cut from standard 15 pica lengths.

Materials for Compositor

Material storage racks have also been constructed and located near the workframes to accommodate pre-cut leads and slugs in lengths over 50 picas. Spaces are available for this material within reach of the compositor in lengths up to and including 66 picas.

Boxes divided into appropriately labeled compartments are provided for quads, ems, ens, regular spaces and brass and copper spaces of different sizes. These are conveniently located at the top of the type cases.

Mr. Samuel noted that the revamping of the composing room has uncovered the necessity for replacement of obsolete equipment with modern labor saving devices. But the most important asset of the change to the functioning of the department, is the providing of space for equipment and materials constantly needed by the workmen without causing unnecessary footwork and backtracking of workflow. That, says Mr. Samuel, is the prime advantage in any composing room operation.

NEW BREADWINNERS IN THE AD ALLEY

Now! NO OTHER MACHINES CAN MATCH THE NEWLY ENGINEERED Wide Range Linotype Mixers— Models 35 and 36 for

- SIMPLICITY
- EASE OF OPERATION AND MAINTENANCE
- RANGE AND VERSATILITY

(ALL OF WHICH ADDS UP TO MONEY IN PUBLISHERS' POCKETS!)

JUST LOOK! Careful research, exhaustive testing have gone into making these machines exactly what you want for your ad alley! Check them on every point—see how they've been engineered to give you new simplicity, ease of maintenance and operation, along with their great range and versatility. The new features described here will be incorporated in all Models 35 and 36 Linotypes ordered after February 1, 1951.

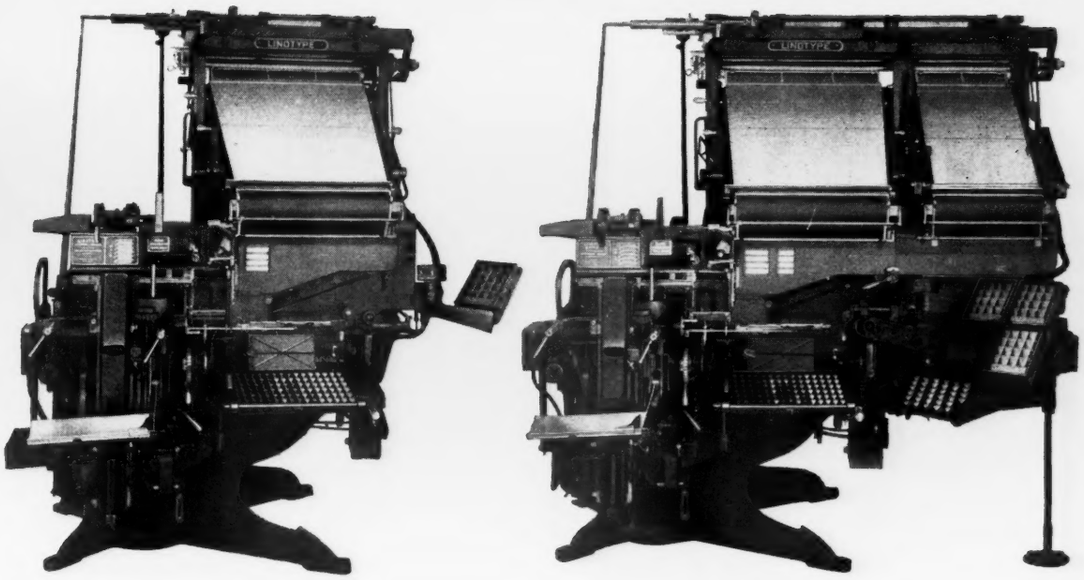
EASY MAINTENANCE is built right into them! They use standard Linotype swing-out keyboards, have fewer parts, and require fewer adjustments than ever before!

[illegible] thanks to the "Feather-touch" mixing device, and the new magazine elevating mechanism.

[illegible] new matrix protection!

AND, of course, they use Linotype's famous 35% wider magazines that allow you to keyboard everything from 6 to 60 points; they enable you to mix text and display without leaving the keyboard. . . . Think of the savings in time, in maintenance, makeup and floor work you'd realize with one of these new Linotype Wide Range Mixers! Check the highlights of these machines on the opposite page; for complete details see your Production Engineer.

FOR ALL YOUR COMPOSING-ROOM NEEDS . . .

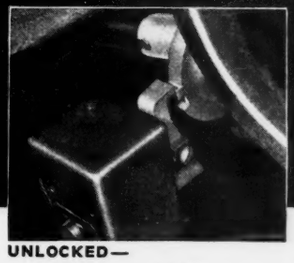


Note these

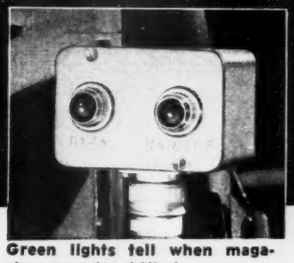
Matrix and machine damage prevented by the new Electromatic Safety System which locks the elevating mechanism when matrices are in distributor box, on distributor bar, or when channel entrances are not cleared. Two green lights signal when magazines are ready for shifting—save time for the operator.

Mix matrices at the touch of a lever with the new feather-touch mixing control. Keyboard action is transferred from one magazine to another with no lost time when mixing faces.

LOCKED—
Magazines cannot be shifted before distribution is completed.



UNLOCKED—
All clear, ready to shift.



Green lights tell when magazines may be shifted.

Simple mixing mechanism is engineered for smooth operation—designed for easy maintenance.

Shifting is easier than ever—the new magazine elevating mechanism has been designed for easy operation under all conditions. There are no adjustments to check—no motors or complicated mechanisms to service.

Standard keyboard swings out in just 8 seconds for easy inspection, cleaning and servicing. Entire keyboard can be serviced *on the machine*—no need to remove it to a bench.

New swinging keyboard rod frame on all models with 72- and 90-channel magazines eliminates the intermediate selector mechanism between keyboard and keyrods. A touch of the new mixing control pivots the proper set of rods into operating position.

MODELS 33 & 34 ARE NEWLY ENGINEERED, TOO! If your composition doesn't require mixing, but you want the maximum in range and simplicity of operation, look at the new Single-Distributor Wide Range Linotypes—Models 33 and 34. The Electromatic Safety System, standard keyboard and new magazine elevating mechanism are also used on these machines. The Model 33 accommodates 1 to 4 wide main magazines; the Model 34 has the additional capacity for 1 to 4 wide 34-channel auxiliary magazines.

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—the BLUE STREAK COMET!

The fastest, simplest, and most economical line machine made! All functions of the two-magazine Comet have been simplified for maximum ease in operation and maintenance. Ideal for hour-after-hour production or for last minute rush jobs.

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The ABC of OFFSET

For Letterpress Printers

By George Jos. Lenzer

XIV—THE HALFTONE

ONE of the most controversial photomechanical subjects is the halftone process. Rich in tradition, research and theory, each phase of photography comes in for its share of argument. Halftone reproduction has its basis in several theories, the most generally accepted being the theories of Ives, Levy, Deville and the analysis of Fruwirth.

Halftone Screens

To better understand the proposed theories of the halftone, your attention is called to diagram Fig. 26, halftone screen[1].

Whether circular or rectangular in shape, the glass halftone screen is in effect a sandwich of two plates of glass with engraved and etched fine-ruled, opaque-pigmented and parallel lines, cemented together with the lines between them and crossed at 90 deg. right angles to each other (Fig. 0).

The rulings are normally equal in width to the spaces between them at a ratio of 1:1. Other rulings are available at ratios of 1:2, 1:1½, 1½:1, 2:1, and 3:1. Beginning with a ruling of 50 lines to the inch, halftone screens are produced with ruling up to 400 lines per inch.

Theories

How the halftone screen functions, and what effect it has upon the action of light during the time of exposure, has resulted in several controversial theories being propounded to explain the action.

1—*Pinhole Theory* was proposed by Ives, who assumed that each opening in the cross-ruled screen served as a pin hole lens. It was his belief that each minute aperture of the screen projected a vignetted image of the lens aperture onto the sensitive emulsion of the film or plate.

2—*Diffraction Theory* submitted by Levy, is one in which he contends that variation of dot size is attributed to the diffraction of light. It was his opinion that without deflected light, the dots would vary in opacity alone, rather than a variation in size.

3—In the *Penumbral Theory*, Deville proposed that during an exposure, the opaque screen rulings projected shadows onto the light sensitive material. He opined that the cast shadows were either lengthened or shortened in proportion to the light intensity reflected from the copy.

These theories are accepted in general because of their plausibility and because in combination, the expressed principles do affect the halftone image.

Fruwirth Analysis

Fruwirth conducted intensive investigations of the Diffraction Theory which he approved. The results of his findings are generally accepted as the most complete and convincing explanation of the halftone effect. His opinions are as follows:

A—A definite focal length is ascribed to every glass halftone screen.

B—Every screen has a light-speed ratio based upon the specific rulings. Screens of 50 to 100 line rulings are slower than screens with finer gratings of 120 to 400 lines. A screen of 200 lines is considered to be 400 times faster than a 100 line screen.

C—Focal distance of each screen varies with each change of bellows extension. Because of its short focal length, no adjustment of screen distance is required, despite any change in camera extension.

D—Since color correction is nonexistent, adjustment in screen distance is necessary when color filters, affecting the wave lengths of light, are used.

The three theories and the Fruwirth analysis are based upon the fact that space of variable distance exists between the screen surfaces, emulsion and the screen ruling itself.

Photographic Halftone Effects

A coarse ruled screen, 50 to 60 lines per inch, renders a reproduction of extreme contrast between light and dark areas. This is desirable in the production of large displays, where large printable dots are essential. Fine detail of the copy is sacrificed and lost when a coarse screen is used.

In photolithography and offset printing the screens most generally used are 110, 120, 133, 200 and 300 lines per inch, with the 120 and 133 having greatest preference. More detail in the original is photographically attainable when screens of these rulings are utilized.

In lithography, 200 and 300 line screens find their greatest use in the production of negatives employed in the projection process of platemaking. In this instance, the finest detail can be projected, and can be reproduced in greatly enlarged dot size. Even though the enlarged halftone image dots equal in size the dots produced by a 50 line screen

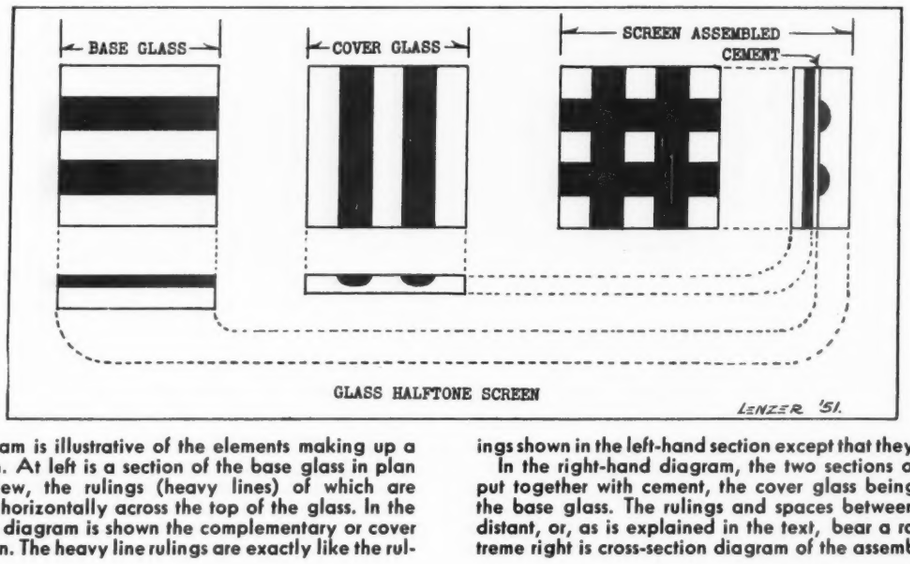


Fig. 26.—This diagram is illustrative of the elements making up a glass halftone screen. At left is a section of the base glass in plan and cross-section view, the rulings (heavy lines) of which are parallel and extend horizontally across the top of the glass. In the center section of this diagram is shown the complementary or cover glass part of the screen. The heavy line rulings are exactly like the rulings shown in the left-hand section except that they are at right angles. In the right-hand diagram, the two sections of glass have been put together with cement, the cover glass being superimposed on the base glass. The rulings and spaces between rulings are equidistant, or, as is explained in the text, bear a ratio of 1:1. At extreme right is cross-section diagram of the assembled screen.

·here is no increase in photographic contrast, nor does the detail suffer any loss.

Screen Sizes

Rectangular halftone screens are obtainable in a size range from 6 in. by 8 in. to 34 in. by 40 in., depending on the ruling. Used primarily for black and white reproduction, these screens can be used for color work in cameras equipped with rotating copyboards. Circular screens are made in sizes from 13½ in. to a size capable of accommodation by the largest process camera built. Halftone screens in general use have a size range from 13½ in. to 44 in. diam.

A certain maximum plate coverage is obtainable from a screen, whether or not it is rectangular or circular in shape. This means that the entire overall surface area is inoperative. Example: an 8 in. by 10 in. plate is the largest sized plate that can be fully and effectively covered by a circular screen 13½ in. diam. A screen with a minimum diameter of 26 in. accommodates a 16 in. by 20 in. plate which is the maximum size effectively covered by the screen.

Exposure and Optical Factors

Exposure of the negative is dependent upon the following factors:

A—*Conjugate Foci* are the distances between the copy surface and the lens, and from the lens to the emulsion surface. Because these distances are interdependent, they are called Conjugate Foci.

B—*Lens Stops* are important in halftone photography. The character of the negative, to a great extent, is dependent upon the stop size and shape. Because the stop size bears a definite relation to the bellows extension, it should never be decided by guess or rule of thumb.

C—*Camera Extension*—No matter what the distance from the copyboard to the lens may be, Camera Extension is important. Since the bellows extension is a deciding factor, some means of accurately measuring the extension distance should be incorporated in the camera assembly. When the bellows extension is increased or decreased, the lens stop opening is proportionately made larger or smaller. The ratio thus established is based upon same size settings. Ideal co-ordination or control of the bellows extension and lens stop opening is accomplished by the Douthitt Diaphragm Control. Of the Stop and Extension ratios, the most popular is the 1:64 ratio, which indicates that the stop diameter is 64 times smaller than the camera extension.

D—*Screen Distance* must be exact and uniform over the entire area separating the emulsion surface and the surface of the halftone screen. This is necessary in order that dot size may be uniformly controlled. Exactness of the screen distance depends upon the screen ruling, and must be co-ordinated with the lens stop opening, to produce the desired dot in the negative. Any inequality existing in the screen distance will cause dot distortion.

E—*The Flash* exposure is produced by exposing the negative to light reflected from a white curtain or sheet of white paper, or by holding a flash light-unit close to the lens. Its purpose is to provide a dense core for all the dots, while also introducing fine pin dots in shadow areas where ordinarily no dot would register. Flashing, makes it possible to retain detail which would be lost if the necessary dots in these areas were omitted. The Flash exposure is independent of the exposure to the copy, and remains constant for the entire tonal range or gradation.

Care of Halftone Screens

The halftone screen as a part of the optical system, is composed of millions of tiny photographic lenses, each of which can be irreparably damaged by careless handling and cleaning. Because the screen is one of the most costly pieces of equipment and its immediate replacement is not assured is sufficient reason why its care and handling should be so meticulously observed. Its efficient performance is intimately affected by the surrounding atmosphere, temperature and humidity.

With extreme temperature changes, the screen is subject to expansion and contraction, the effects of which can induce separation of the two glass elements. Air between the glass plates will speed deterioration of the cement. Infiltration of solvent cleaning preparations and moisture causes discoloration of the cement, resulting in permanent impairment of the screen's efficiency.

When the screen is colder than the surroundings, condensation of moisture on the screen's surface takes place. Condensation fog or sweating sets up a series of damaging reactions, most serious of which is the atmospheric deposition of chemically abrasive or corrosive elements. Under some conditions, an atmospheric deposition of a grease-like film on the screen surface is a common occurrence. These invisible films hold tenaciously the dry microscopic dust particles which settle upon them.

Dust particles adhering to the screen surfaces interfere with the free transmission of activating light rays. Some of the undesirable pin holes in negatives, and missing dots in the image can be traced to light interference caused by the adhering particles of dust.

Under climatic conditions favorable to mold and fungus growth, other disturbing difficulties are produced. Atmospheric deposition of mold and fungus spores, and other micro-organisms upon the screen surfaces and other parts of the screen assembly can cause troubles more difficult to trace. The most obvious of these are corrosion; and the invisible and undetectable light interference, which is only discernable in the finished negative.

Since the interior of the darkroom is more humid than normal, it is obvious that the foregoing difficulties will persist unless an effective system of air conditioning is installed.

Other factors affecting the screen's efficiency or performance can be attributed to inconsiderate handling by the operator, and by too strenuous an application of cleaning operations. The imposition of finger prints on the screen surfaces can be troublesome if they are located within the plate coverage area of the screen. Due to their diffusing action on the activating light rays, images of the finger prints frequently register in the negative. The finger prints become more troublesome when they are permitted to remain and gather dust and dirt particles.

During cleaning operations, too much friction by rubbing will set up a static electrical charge within the halftone screen. The static charge will attract and hold certain particles of magnetic dusts of metallic oxides, and other foreign matter. These are the most difficult to remove. Dusting with a brush or cloth, only tends to relocate the particles until such time as the static charge is dissipated, when the particles can be easily removed with a statically charged pocket comb, or by gently wiping with a lens tissue.

Importance of Cleanliness

The glass surfaces of the halftone screen are easily scratched. Whether it is long, short, shallow or deep, a scratch in either surface destroys the screening properties of the areas injured. The scratch will register in the negative as a transparent line of equal length.

Gritty dust, being the most dangerous in its effect upon the glass surfaces, must be gently and carefully removed. This can be accomplished by a flicking action with a camel hair brush rather than by a dragging brush stroke as in painting. Brush dusting should be the first operation in halftone screen cleaning procedure. All subsequent cleaning operations should be executed with the same care and caution as that used when caring for the lens.

Remember, cleanliness and good housekeeping in the camera department never fails to pay off.

(To Be Continued)

Recommended additional reading:

[1] *Halftone Screens for Lithography*, J. S. Mertle, *National Lithographer*, September 1948 to March 1950, incl.

NALC Convention

The sixth annual convention of the National Association of Litho Clubs will be held at Hotel Cleveland, Cleveland, Friday and Saturday, May 11 and 12.

Two features of the meeting are: Larry Brehm, Director, Research Institute, Western Printing & Litho Co., Racine, Wis., will discuss *In-Plant Training*. The other major feature will be the setting up of a number of tables in one room (22 segregated tables are contemplated—one for each section of the offset process). At each table, one or more experts familiar with a particular part of the offset process will answer questions propounded by those wanting technical information. Any convention visitor may consult with the experts at one or more, or the experts at all of the tables. These technical information centers will be available on Saturday afternoon, May 12.

Group bus trips are scheduled on Friday afternoon, May 11, to the Harris-Seybold plant.

Ladies' entertainment has been planned.

Equipment & Supplies

If you wish additional information concerning equipment, supplies and/or technical literature, please make your request to PRINTING EQUIPMENT *Engineer*, 1276 West Third St., Cleveland 13, Ohio.

When writing to us about any of the items described, and to save your time, just mention in your request the PEE symbol which appears at the end of each description.

Times Roman Booklet

A 16 PAGE reference booklet on Linotype's Times Roman, has been published by Mergenthaler Linotype Co. The two-color booklet illustrates various ways in which Times Roman may be used, and includes all characters, figures, logotypes and fractions available. Block settings of 5½ pt. through 14 pt. Times Roman, in combination with italic and small caps and with bold, are also included to show the type's appearance when used in mass. Alphabet lengths of the various sizes of Times Roman are listed along with other matrix information. Originally designed for the London (England) *Times* by Stanley Morison, the type face was introduced in this country about five years ago. When writing for further information mention PEE No. 58 in your request.

Deep Etch Process

HARRIS-SEYBOLD Co. has issued a 24-page, two-color booklet titled *A Detailed Report on the Deep Etch Process*. Illustrated with diagrams and sketches, the report consists of five articles which appeared originally in *Harris Impressions*, the firm's house organ. The booklet classifies the 15 major steps of making a deep etch plate as five basic operations which are as follows: Sensitize, Expose, Develop, Form the Image, and Remove Coating. Each step is discussed separately. Also included are original charts on effect of various exposures and a graphic summary of the deep etch process. The report is printed on 70 lb. white offset stock, 5½ in. by 8½ in.; lithographed in black and Harris blue on a two-color Harris press. For additional information, mention PEE No. 57 in your request.

Graphic Scales Set

BASIC printing production problems can be solved with a set of three instruments and booklet produced by O. M. Forkert and Associates. The instruments are made of Vinylite plastic rigid sheet which is claimed to have dimensional stability, resistance to moisture and most chemicals, non-flammable and easy to clean with a damp cloth.

With the instruction book listing alphabet lengths of more than 1000 type faces, the Graphic Typemeter (bottom right instrument in the photo) can provide the answers to the following typographical questions: (1.) How much space is needed to convert a given amount of typewriter copy into a given style and size of type? (2.) How much copy is needed to fill a given amount of space with a given style and size of type? and (3.) How much type matter is needed to fill a given amount of blank space with a given quantity of copy?

The Type Line Meter (top instrument in the set) measures the exact number of

lines of type in ten sizes, from agate to 18 pt., that will fit in a given space and will also measure the slug size of printed matter. The Proportion Dial (bottom left instrument in the illustration) provides enlargement and reduction dimensions for illustrations from ½ in. to 100 in. When set to the picture's depth and width, a transparent dial and arm turn together to provide the second dimension for any desired depth or width. When writing for further information mention PEE No. 53 in your request.

Industrial Lighting

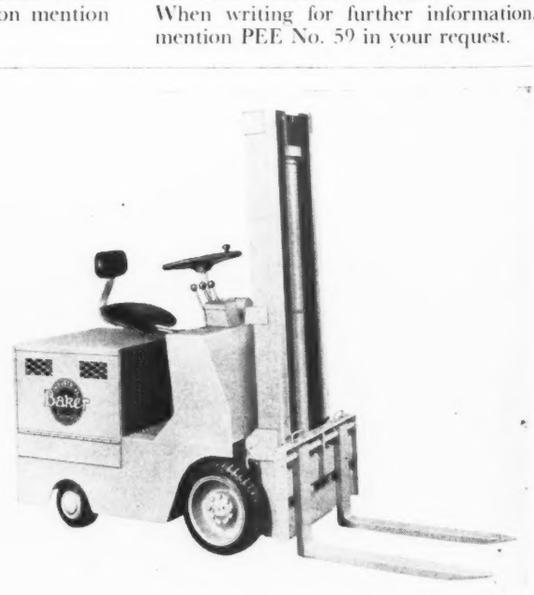
PLANNED Lighting for Industry is the title of a 47 page booklet issued by General Electric Co., Designated Bulletin LD-4, the well illustrated booklet outlines the benefits of good industrial lighting in the form of increased efficiency, safety and morale, improved quality, reduced spoilage, lowered costs, less eye strain, improved health and conserved manpower.

The bulletin then describes how to engineer lighting to various industrial tasks, discussing six principal lighting systems, and the use of specific techniques for special needs. It includes the types of light sources and luminaires available for the various lighting requirements, and goes into the relationships of brightness and color conditioning. Sections of the publication are devoted to protective lighting, wiring for the lighting system, maintaining the lighting system, and the lighting of service areas, offices and other rooms. Mention PEE No. 54 in your request for additional information.

Protects Electric Coils

IT IS claimed that electrical components, such as coils, etc., can be protected from moisture to prevent shorting out by impregnating with a synthetic wax known as Wax S-1167. According to Glyco Products Co., coils impregnated with this wax by a pressure-vacuum system have resisted shorting for a minimum of 30 cy. after being steeped in water containing a powerful detergent before every cycle. Wax S-1167 is a synthetic dark organic wax with a ball and ring melting point of 120-125 deg. C. (248-257 deg. F.) and a flash point higher than 250 deg. C. (482 deg. F.). Sponsor states the wax is tough and nonbrittle and does not tend to become very brittle at low temperatures. It is claimed the material has good electrical properties and resistance to water and oils. When writing for further information, mention PEE No. 59 in your request.

2000 lb. Capacity Fork Truck The Baker Industrial Truck Div. of The Baker-Raulang Co. has designed a fork truck for all industrial applications with a capacity of 2000 lbs., 48 in. long. The operator sits on a form padded seat with back rest in an off-center position from which the ends of the forks are visible. Direction of travel is selected by a lever and five speeds in either forward or reverse are controlled by an accelerator pedal. Another pedal controls a mechanical brake of the air cooled drum type. Tilt and hoist levers are adjacent to the directional travel control. Specifications: width, 32½ in.; outside turning radius, 65 in.; min. intersecting aisles, 59 in.; right angle turn 79½ in. plus length of load; overall height, 83 in.; telescoping lift, 130½ in. loaded; initial lift, 65 in. loaded; length of forks, 36 in.; outside spread of forks, 32 in.; and weight, 4950 lbs. When writing for further information, mention PEE No. 60 in your request.



Pocket-Size pH Meter A self contained pocket-size pH Meter and companion probe unit which enables pH determinations to be taken anywhere in the plant, has been introduced by Analytical Measurements, Inc. The instrument is enclosed in a bakelite case measuring 3 in. by $5\frac{7}{8}$ in. by $2\frac{1}{2}$ in. and is furnished with a waterproof and fungusproof carrying case with plastic tubes of buffer and KC1 solutions. Total weight is 3 lbs. The meter is scaled from 2 to 12 pH and an adjustment enables readings from 0 to 14 pH. Sponsor claims that accuracy of 0.1 pH is obtainable. For additional information, mention PEE No. 64 in your request.

Linotype Caledonia

OLD Style figures in roman and italic are now available for all point sizes of Caledonia and Caledonia Bold, according to Mergenthaler Linotype Co. This includes Caledonia with italic and small caps in 6 to 14 pt. sizes, Caledonia with Caledonia Bold in 6 to 14 pt. sizes, and Caledonia Bold with italic and small

1234567890

1234567890

caps in 6 to 14 pt. The figure 3 in the lining form in both the regular and bold weights of Caledonia has been redesigned and opened up, according to Jackson Burke, Director of Typographic Development for Mergenthaler. The improvement of the new form can be seen in the specimen lines here. For additional information, mention PEE No. 55 in your request.

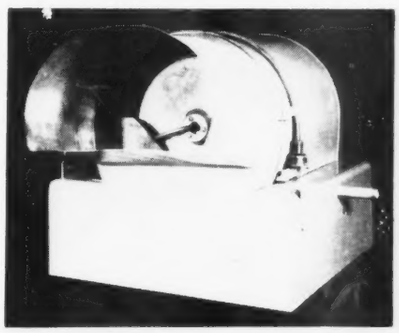
Portable Conveyor

THE Hytrol Portable Folding Conveyor is designed to handle boxes, bundles, cartons, bales and bags for warehouse materials handling between-floors operations. The sponsor, Seedburo Equipment Co., states the conveyor can be moved and operated by one man. It can be moved, or the angle of delivery changed, while the conveyor mechanism is in motion. The materials handling machine is available in five sizes, each of which folds to one-half of its own length. Sponsor claims that it can handle 15 100 lb. bags per min. For additional information, mention PEE No. 56 in your request.

Rubber Plasticizer

SCHWARTZ Chemical Co., Inc., claims a rubber plasticizer which will prolong the performance life of all rubber products used by printers, such as rubber feed rollers, platens, blankets, mats, belts and suction cups. When applied by cloth or brush to rubber parts or surfaces which have hardened, cracked or become inelastic with age, the chemical plasticizes the rubber and is reported to impart the feel, grip and resilience of new rubber.

Designated Rub-R-Vive, the product is described as a non-inflammable and non-volatile liquid. Because it does not evaporate but is absorbed by the rubber, according to the sponsor, one application results in a lasting improvement. Available in pint, quart and gallon cans. For further information, mention PEE No. 65 in your request.



Industrial Humidifier The IMPSCO Industrial Humidifier operates on the principal of atomization through centrifugal force, according to Industrial Materials Purchasers Co. Vapor is emitted in mist-like form from the humidifier in one direction enabling the units to be mounted on walls, corners or supporting posts. Sponsor states that each unit is a complete system in itself and requires only a water feed line. Specifications: width, 12 in.; height, 14 in.; length, 22 in.; weight, approx. 50 lbs.; vaporization capacity, 1 gal. per hr.; $\frac{1}{4}$ h.p. motor, 110 v., 60 cy. Mention PEE No. 52 in your request for further information.

Drills and Punches Booklet

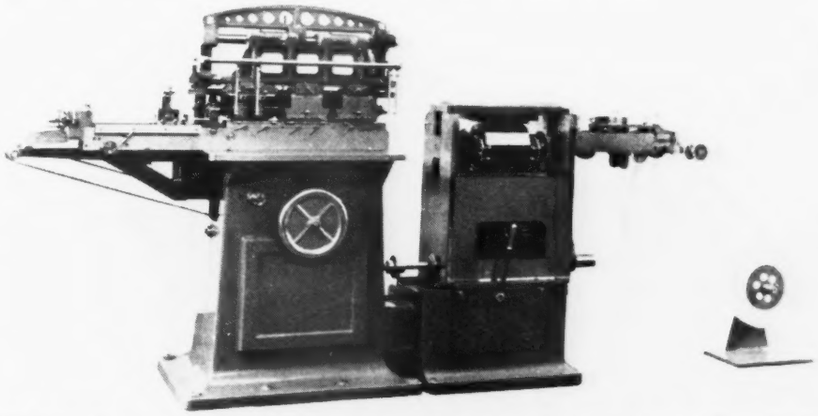
A SURVEY of single spindle drills, multiple spindle drills, and punches has been prepared by *Bookbinding & Book Production* and presented in a 32 page booklet. The text covers the care, maintenance and operation of drills and punches, and includes specifications tables for both single and multiple spindle drilling machines. Illustrations of various drilling and punching machines are shown along with the widely used holes that are produced on punching machines. A table listing the characteristics of different manufactured punching machines is also included. Copies of the booklet are available at 50 cents each. For additional information, mention PEE No. 63 in your request.

Silk Screen Equipment

THE Naz-Dar Squeegee Sharpener is illustrated and described for silk screen printers in a two color, four page bulletin issued by The Naz-Dar Co. The portable squeegee sharpener is equipped with a $\frac{1}{4}$ h.p. motor, diamond point wheel dresser, adjustable guide rail, specially compounded wheel, and micrometer adjustment. Sponsor states the machine trims down to 0.001 in. in sharpening. Other items of equipment illustrated and described in the bulletin are stencil knives, bi-cutters and swivel cutter, pouncing wheels, circle cutters, adjustable cutting glass, and a tool for stretching silk when placed in the frame. For additional information, mention PEE No. 62 in your request.

Mort Issued Patent

A U. S. Patent has been issued to Ralph H. Mort for the Mort Dampener Cleaner, a machine designed to automatically wash cloth covered rollers. It is stated that the machine is not severe on the roller fabric, rollers remain absorbent and retain their uniformity due to equalized friction applied along the entire roller during the washing operation.



Ticket Printing Press The Rolca Ticket Printing Press is designed to print, perforate and punch tickets in sizes up to $6\frac{1}{2}$ in. long. Announced by Amsterdam Continental Types and Graphic Equipment, Inc., the press will print tickets one, two, four or six up, in three colors (or two colors and one number) on the front, and one color on the back. The web-fed machine will accommodate paper, cardboard, gummed and ungummed stock and, it is claimed, has speeds up to 12,000 i.p.h. on non-gummed stock. Sponsor states the press can be equipped for varying web widths, consecutive numbering, slitting and cutting of single tickets. Mention PEE No. 50 in your request.

Recent Equipment Reports

General Electric Co.

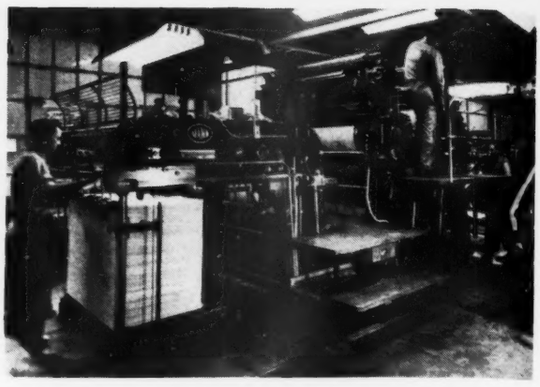
General Electric Co. reports that the New York *Times* and the Baltimore *Sun* have installed G-E's new electronic press drive equipment. The *Sun* installation includes 38 G-E 40 h.p. motors to operate the newspaper's six Hoe presses, each including four eight page units and folder, at an output speed of 50,000 papers per hr. G-E electronic drive now is powering seven Wood printing units and two folders for the *Times* at a speed of 45,000 papers per hr. Nine 30 h.p. G-E motors provide the drive. The electronic drive, it is claimed, assures an accurately controlled flow of power to the individual motors which impel the multiple-unit presses. It is further claimed, this avoids the unequal driveshaft stresses which are one of the prime causes of breakage of the paper web as it travels through the presses.

Electric Boat Co.

Four recent installations of E.B.Co. 22 in. by 34 in. Single Color Offset Presses reported by the Printing Machinery Div., Electric Boat Co., are as follows: Printing Dept., Esso Standard Oil Co., Baltimore, Md.; Gerard Printing & Advertising Co., Omaha, Neb.; John F. McKenna Co., Inc., East Orange, N. J.; and The Joplin Printing Co., Joplin, Mo.

Wood Newspaper Machinery Corp.

The Wood Newspaper Machinery Corp. reports recent shipments of press, web-splicing, and stereotype equipment to the following: St. Louis (Mo.) *Post-Dispatch*; Montreal (Can.) *LePetit Journal*; Triangle Publications, New York; Roanoke (Va.) *Times-World*; Montgomery (Ala.) *Advertiser-Journal*; Macon (Ga.) *Telegraph*; Fargo (N. D.) *Forum*; Rice Barton Corp., Worcester, Mass.; New Haven (Conn.) *Register*; Waycross (Ga.) *Journal-Herald*; Lansing (Mich.) *State Journal*; Wilkes-Barre (Pa.) *Record-Times-Leader*; Peoria (Ill.) *Journal-Star-Transcript*; Providence (R.I.) *Journal-Bulletin*; Cincinnati (O.) *Enquirer*; Concord (N.C.) *Tribune*; Lynchburg (Va.) *News & Daily Advance*; Worcester (Mass.) *Telegram-Gazette*; Los Angeles (Calif.) *Times-Mirror*; Temple (Tex.) *Telegram* and Miami (Fla.) *Herald*.



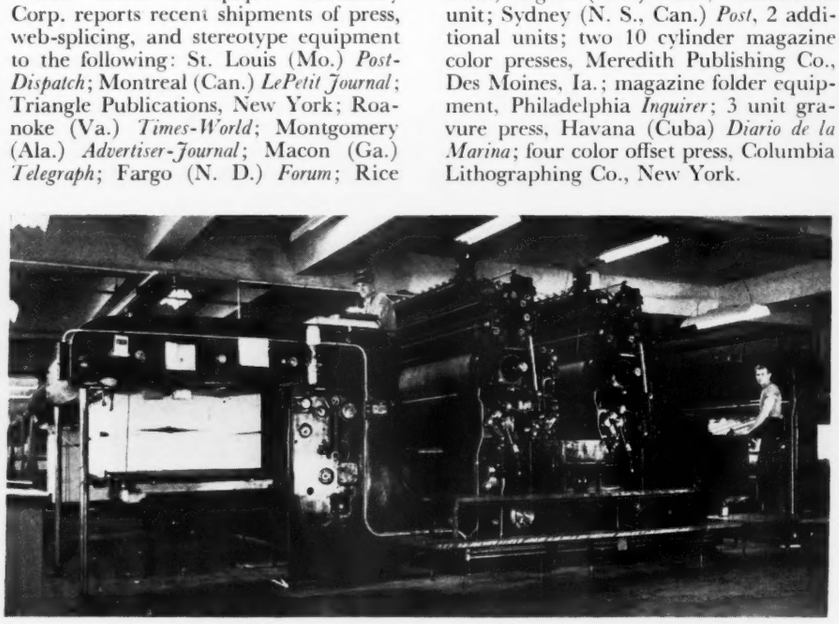
Mann Press Installation—New two-color offset press imported from England and installed at Shorewood Press Inc., 304 E. 45th St., New York. The press is one of a line of 14 offset models manufactured by George Mann & Co., Ltd., of Leeds and handled in the United States by American Type Founders. The press shown in the illustration is model L248A, with max. sheet size of 36¼ in. by 48½ in. and a speed up to 5000 i.p.h.

R. Hoe & Co., Inc.

Equipment orders reported by R. Hoe & Co., Inc., since the beginning of the present fiscal year, October 1, 1950, are as follows: Color-Convertible Newspaper Presses, Long Island City (N.Y.) *Star Journal*, 6 units; Montreal (Can.) *Star*, 5 units; Ottawa (Can.) *Journal*, 6 units; Cleveland (O.) *Plain Dealer*, 7 units; Montreal (Can.) *Gazette*, 5 units; Wilkes Barre (Pa.) *News-Record*, 8 units; Havana (Cuba) *Diario de la Marina*, 6 units; Rio de Janeiro (Brazil) *O Globo*, 6 units; Lancaster (Pa.) *Intelligencer*, 2 additional units; Eugene (Ore.) *Guard*, 1 additional unit; Sydney (N. S., Can.) *Post*, 2 additional units; two 10 cylinder magazine color presses, Meredith Publishing Co., Des Moines, Ia.; magazine folder equipment, Philadelphia *Inquirer*; 3 unit gravure press, Havana (Cuba) *Diario de la Marina*; four color offset press, Columbia Lithographing Co., New York.

Lawson Installations

Eleven installations of Lawson equipment have recently been made by the E. P. Lawson Co. They are as follows: Drill Slotting Machines—Joseph Berg Mfg. Stationers, New York; The Majestic Press, Philadelphia; 39 in. Automatic Clamp Cutters, Keith Clark, Inc., Sidney, N. Y.; Congress Bookbinding Co., New York; J. W. Ford Co., Cincinnati, O.; Tennessee Valley Authority, Chattanooga, Tenn.; 46 in. Hydraulic Clamp Cutters — Neyenesch Printers, Inc., San Diego, Calif.; Radio Corp. of America, Indianapolis; 52 in. Hydraulic Clamp Cutter—Behr Manning, Inc., Watervliet, Troy, N. Y.; seven 52 in. Hydraulic Clamp Cutters, The Todd Co., Inc., Rochester, N. Y.; 52 in. Electronic Spacer Cutter—Highland Supply Corp., Highland, Ill.



Wolff Printing Co. Installs Harris Press—Pictured above is the 50 in. by 72 in. Harris two-color offset press installed recently in the plant of the Wolff Printing Co., St. Louis. The Wolff company is now the southwestern division of the Western Printing and Lithographing Co. of Racine, Wis. Shown operating the press are pressmen Alan Crawford (left) and Howard Neal.

Boston Tea Party—Reported to be brewing up a potful of tea are members of the committee which will play host to the 32nd Annual Convention of Intl. Assoc. of Printing House Craftsmen in Boston, August 19, 20, 21 and 22. Pictured from left to right are: Boston Club President, John Glover, Tileston & Hollingsworth Co.; Past Intl. President and Convention General Chairman, A. Gordon Ruiter, Forbes Lithograph Co.; Ladies Committee Chairman, Mrs. Elsie Lovgren; and Boston Club Secretary, Harry Faunce, Rumford Press. Clinics on typography, paper, electrotyping, and photoengraving have already been scheduled on the program. Five New England clubs are sharing sponsorship honors, and a record registration is expected to invade the Hub for the convention.

Pyroxylin-Treated Book Cloths

M. S. Kantrowitz, Chairman, Research Committee, Washington Club of Printing House Craftsmen.

THE term "pyroxylin-treated," as applied to book cloth, denotes two types of fabrics used by bookbinders. These are the pyroxylin-impregnated fabrics and the pyroxylin-coated fabrics.

The impregnated and the coated fabrics are much the same in character, since both contain the same ingredients, the difference being chiefly in the manner of application of the protective coatings and the quantities applied. In each instance, a cotton cloth is treated with a pyroxylin composition consisting of a gelatinized nitrocellulose, a plasticizer to confer softness and flexibility to the finished fabric, and a pigment or dyestuff to produce the desired color effect. A solvent is added to facilitate applying the mixture to the cloth.

The construction of the base cloth used for impregnated fabrics differs somewhat from that used for coated fabrics. The former is usually produced from such foundation fabrics as print cloths or muslin, which are plain-weave cloths of light weight. The latter are usually produced from heavier fabrics, such as drills, twills, sateens, and sheetings.

In the case of the coated fabrics, the pyroxylin composition is applied as a more or less heavy coating to the surface of the base cloth and varied somewhat to effect the particular kind of finish desired. The coated fabrics are generally embossed or finished to resemble leather, hence the name "imitation leather" frequently applied to this type of material. The impregnated fabrics are formed by forcing the pyroxylin composition into the spaces between the threads of the base cloth. This not only tends to anchor the pyroxylin composition to the cloth but also permits its texture to remain visible.

Popular Mechanics Press—The installation of a specially designed Goss press was made recently in the printing department of Popular Mechanics Co., Chicago. The two color press has a capacity of 96 pages and a max. web speed of 1000 f.p.m. Pictured at the press from left to right are: William Milne, Pressroom Foreman; Wm. Harrison Fetridge, Vice President; and Lyle Howard, Printing Dept. Supt., all of *Popular Mechanics* magazine. At normal running speed, the press will print approx. 30 T. of paper each day, using about 700 lbs. of ink.

Distributes Hartco Machine

DISTRIBUTION of the Hartco Spaceband Cleaning Machine, manufactured by Hartco Mfg. Co., has been taken over by Linotype Parts Co., Inc., according to Emil Bendow, Sales Manager of Linotype Parts. The handcrank-operated machine is designed for cleaning and graphiting wedges and sleeves of line-composing machine spacebands. A description of the machine appeared in the January 1951 issue of *Printing Equipment Engineer*.

Fairchild Courses

Short refresher courses in photographic technique and Scan-a-graver operating procedures were given recently to representatives of 12 up-state New York newspapers and members of newspapers in the Boston area by Fairchild Camera and Instrument Corp. The courses were in charge of Cornelius O'Brien, Fairchild's Director of Field Education. George Arnold, Manager of Customer Engineering for Fairchild, and Sam Dean, Resident Customer Engineer, also participated.

ATF Branch Moves

The Pittsburgh branch of American Type Founders recently moved to new quarters at 111 Federal St. on Pittsburgh's North Side. The new telephone number is Allegheny 1-4994. The location is all on the ground floor and provides parking space for customers.

Pacific Conference

A showing of printing, composing room, stereotyping, photoengraving and bindery equipment for the newspaper and commercial job shop will be shown at the Pacific Newspaper Mechanical Conference at the Biltmore Hotel, Los Angeles, May 18, 19 and 20, it was announced by Fred Moyer, of the Los Angeles *Daily News*, Southern Section PNMC Secretary. "The response from manufacturers and distributors of machinery in the East, middle West and West Coast areas has been highly gratifying," said Mr. Moyer. *Western Printer & Lithographer*, 3922 West 6th St., Los Angeles 5, is in charge of exhibit arrangements for the show. Robert Black, Co-editor, pointed out that several manufacturers had announced their intention of introducing completely new units.

Transfers Business

Richardson-Sovde Co., Inc., Minneapolis, has transferred parts lines and repair service to Twin City Litho Service, operated by Sterling Hoff. Jimmy Richardson and Archie Sovde, proprietors of Richardson-Sovde, explained the change was made to provide better service. The firm retains Imperial type metal, Beveridge stereo mats, Flint ink and the Linotape process.

With the realignment, Richardson-Sovde has expanded its sales, layout and installation service and will sell machinery to every printing mechanical department except the mailing room. A complete plant engineering service will be offered.

Twin City Lino Service has taken over new quarters at 405 Fifth St., South, Minneapolis, Minn. adjacent to Richardson-Sovde, where it will have facilities for better parts and repair service than was possible before.

Pyramid Bindery Installations—Carl Vergano, President of the Pyramid Bindery, New York, and Lester Reiss, Sales Representative of E. P. Lawson Co., are shown above (center) in front of a Lawson 52 in. Hydraulic Clamp Cutter recently equipped with the Lawson Electronic Spacing Device. To the left can be seen a 46 in. Lawson cutter recently installed at Pyramid along with a 39 in. Lawson cutter. The Electronic Spacer is designed for pre-gauging before the cutting operation is begun by setting signals for all required cuts.

Newspaper mechanical and production executives in attendance at the Northwest Mechanical Conference heard Rollo S. Lewis (speaking), Sales Manager, New Products Div., Beveridge Paper Co., explain the advantages of the plastic molding blanket. Mr. Lewis spoke at the Stereotype, Pressroom and Maintenance Machinists clinic. Pictured from left to right at the speakers' table are: Lawrence Kameron, St. Paul *Dispatch* and *Pioneer Press;* Donald Little and Edward O'Neil, both of the Minneapolis *Star* and *Tribune;* W. C. Pratt and William T. Goss, both of the Goss Printing Press Co.

Technical *clinics predominate at Northwest Newspaper Mechanical Conference — Large attendance hears discussion on plastic blanket — Executives told of manpower shortage*

By HORACE ANNIS

UNDER the direction of Vernon G. Eck, Dunwoody Institute Printing Department Instructor, the Eighth Annual Northwest Mechanical Conference held at Hotel Radisson, Minneapolis, February 10, 11 and 12, was considered one of the most successful ever conducted by this organization, particularly from the standpoint of technical question and answer clinics. On hand to assist President Eck during the three day meet were the following officers: First Vice President, John A. Breen, Mechanical Supt., Duluth (Minn.) *Herald* and *News Tribune*; Second Vice President, Robert E. Lee, Composing Room Foreman, St. Paul (Minn.) *Pioneer Press* and *Dispatch*; and Secretary-Treasurer, Ralph N. Carson, Linotype Instructor, Dunwoody Institute, Minneapolis.

Sixteen states were represented in the total attendance of 419, only slightly below the previous record of 444.

The address of welcome was given by Edwin Hannula, Composing Room Foreman, Minneapolis *News*, substituting for Minneapolis Mayor Eric Hoyer.

Engraving Room Clinic

THE Photoengravers Clinic was presided over by Ebbie Jennison, Minneapolis *Star* and *Tribune*, with Lloyd Gardner as co-chairman. First speaker on the program was Meyer Shapiro, who spoke on *The Duplex Screen—Key to Riches in Halftone*.

Shapiro explained the basic features of the Duplex Screen as follows: Glass construction with 50-50 crossline ruling; Lines of deep magenta color and as opaque as the usual black lines; Edges of line smooth and sharp; Refraction free, so light flowing through apertures records dots of great sharpness; Freedom from halation so tone value is true and etching value more easily determined than where halation is present.

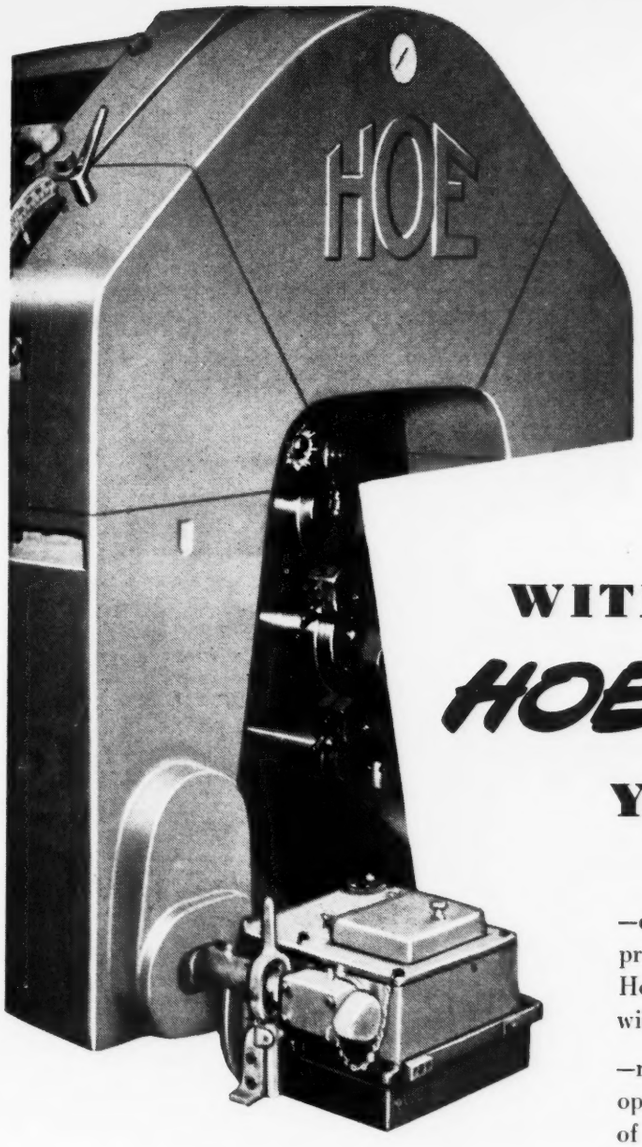
Discussing combination plates, Shapiro said a combination of line and halftone can be shot with a Duplex screen so that the line portion, on 85 line screen and upward, will be crisp and clean. To get pure line with the halftone, a simple rough mask is put over the line copy during the exposure and the line copy is shot through the filter after removing the screen. This, he said, results in register on one negative.

Equipment and Supplies Situation Discussed

Second speaker, Harvey T. Holsapple, Sales Manager, Harold M. Pitman Co., discussed *The Outlook for Photoengraving Equipment and Supplies*. In general, he said, many items of equipment are still available, but chances for them to remain so are not good. He suggested ordering well ahead and to be continually vigilant against the possibility of a shortage halting production.

Cameras are still in good supply, but the drawback is in delivery of lenses with the possibility that government priorities may further reduce the supply even though production is stepped up. Chemicals, particularly bichromate, is another source where sudden shortages might

W. A. Charnstrom (left) of the B. H. Bunn Co. explains the Bunn Twine Tying Machine to newspaper production and mechanical executives at the Mailing Room Clinic held during the Northwest Mechanical Conference. Seated at the speakers' table from left to right are: Co-chairman Joseph Mayen of the St. Paul *Dispatch*, and Al Johnson, Minneapolis *Star* and *Tribune;* and James Brodigan of the Fargo (N. D.) *Forum* who discussed the operation of the *Forum's* mailing room.



WITH A *HOE Color-Convertible Press*

YOU ARE ASSURED

—dependable high-volume, high-quality production, because of the efficiency of Hoe design and precision construction with the finest quality of materials.

—maximum convenience and safety of operation, because of the incorporation of notable and exclusive features developed by Hoe during its one hundred thirty years' experience in building newspaper presses.

—unequaled ease of installation of additional color printing facilities, whenever required to meet increased demands for R.O.P. color.

These are some of the reasons why so many Hoe Color-Convertible Newspaper Presses are being installed by publishers who insist on the finest possible press equipment.

R. HOE & CO., INC. 910 East 138th Street New York 54, N, Y.

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appear. The list of critical supplies also includes acetic acid, lacquer, rubber cement, etc. The alcohol situation has been aggravated, Holsapple said, by a short yield of blackstrap and the fact that large barge shipments of this raw product were frozen enroute to processors. There is some difficulty in obtaining saw blades, and dry plates are becoming scarce because of a glass shortage, he added.

Kodak Photoline Process

Ira J. Hoffman, Technical Representative of Eastman Kodak Co., discussed and demonstrated the Kodak Photoline Process. He pointed out that the process itself is nothing new, simply a modification of bas relief, but that there have been some interesting recent applications.

Basically, the process, as explained by Hoffman, begins with a fully exposed film negative, and the lighting of the subject accentuating its outlines. The light sources should be large enough so the edges of the shadows are not sharply defined. The negative should be as sharp as possible and a large film should be used. For pictorial purposes it is desirable to have more and thicker outlines in the shadows than in the highlights. This is achieved by using continuous tone negatives in which the shadows have more contrast than the highlights.

The greater the density range of the transparencies, the easier it will be to make a satisfactory outline print, provided the positive mask and the negative are matched over the entire range. The density range over which they can be matched is limited, but a range of 1.5 is usually satisfactory.

With the positive matched to the negative, back to back, a gray appearance results. When this mask is on, some parts are visible with the rest blocked out. The positive and negative made in contact, emulsion to emulsion, are mounted back to back so that the faces of the two films are between the two emulsions. These are now put into a printing frame, in perfect register, and the frame placed on a turntable. About 4½ to 5 ft. above the turntable a 60 w. light bulb is placed at an angle of 45 deg. in relation to the printing frame. A 15 to 20 sec. exposure is made on Kodalith film with the turntable revolving about 20 r.p.m. for even exposure at all angles.

Then the film is developed in regular Kodalith film developer and a line shot results which looks like a pen and ink sketch. There will be portions with middletones and halftones. By cutting back with a weak solution of ferrocyanide any effect can be obtained. After this operation, another contact negative is made on Kodalith film, resulting in a strict line shot.

Making a Duotone

If a deep etch is desired a positive can be made in contact instead of the negative.

To make a duotone from the line job, Hoffman explained, a gelatin bleach is used. This consists of 6¾ oz. of copper nitrate, 145 gr. of potassium bromide and 5 oz. of glacial acetic acid with water to make 32 oz. as the A solution. The B solution consists of 3 per cent hydrogen peroxide. Solutions A and B are used in equal parts for the bleach and bleaches the exposed silver to take out the gelatin. A print is then made on a contrasty piece of Resisto paper, either No. 4 or No. 5. The silver is bleached off down to the waterproof Resisto paper and the remaining hali is taken out with hypo. This results in a gelatin image on the paper.

If the tint is put on the paper first, then print the negative line shot on the paper right over the tint, develop and bleach it, and a gelatin image of the tint results. Then, after bleaching that out, only the gelatin image is left. With a very weak blue solution of Flexichrome dye, the entire image is dyed a light blue so it will not photograph. Using a dye and a brush, you save whatever tint you want.

In a question and answer period, Hoffman explained that duotone can't be

(*Continued on Page 58*)

Silent Operation— No Maintenance

IN THE composing room of the Detroit *News*, all of the magnetic contactor or clapper switches in the electric pot panel boxes on Linotypes have been eliminated. Instead, a mercury relay has been mounted in the panel box of each machine. This type of mercury relay is totally enclosed in a glass envelope and is silent in operation. Since there are no moving parts, there are no parts to wear out.

It is said these mercury relays are claimed to be capable of millions of operations. They are rated at 35 amp. at 115 v., and at 25 amp. at 220 v. This is more than ample capacity to carry the load in the metal pot of a line-casting machine.

The relays used at the Detroit *News* are manufactured by the Ebert Electronics Corp., 185-09 Jamaica Ave., Hollis 7, Long Island, New York. The catalog description is Type EM-1 Mercury Relay, 220 v., 25 amp., 60 cy.

The *News* first learned about the relay and its application when John Peters, Chief Electrician of the New York *Daily News* visited the plant about a year ago.

Fig. 1.—This illustration shows mercury relay mounted in panel box on Linotype machine in plant of Detroit *News*. The old-style magnetic or clapper switch mechanism has been removed. The relay is silent in operation and there are no moving parts which are wearable.

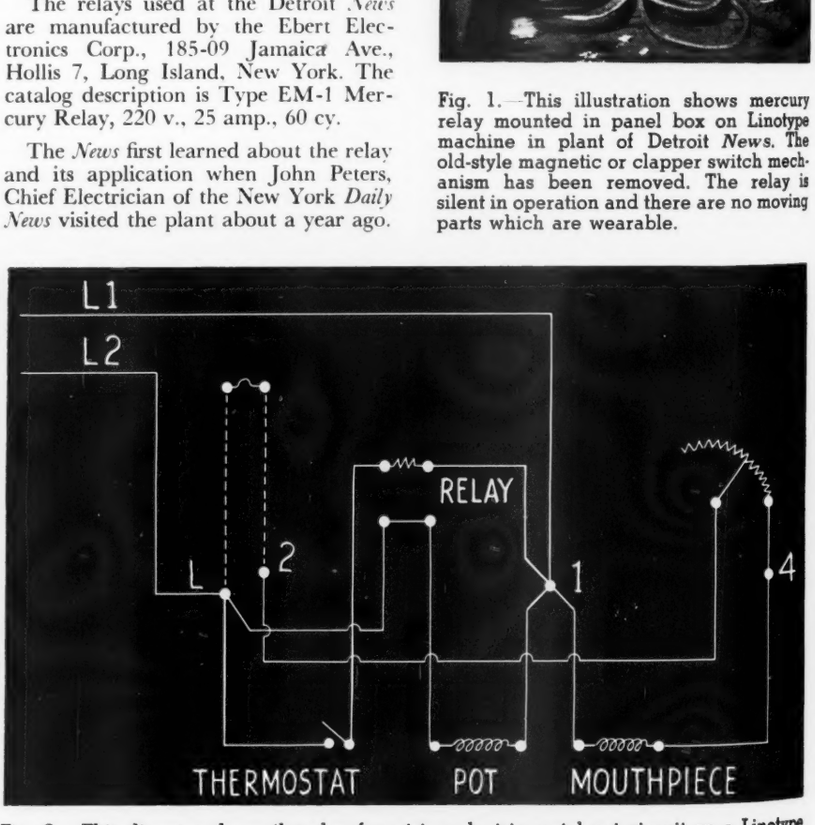


Fig. 2.—This diagram shows the plan for wiring electric metal pot circuit on a Linotype after removal of the older type magnetic switch which is replaced by the mercury relay shown in Fig. 1. One of these wiring diagrams is cemented in each panel box door. The dash lines in this diagram indicate wires behind the panel board and which are not visible.

Patents

For The GRAPHIC ARTS

Covering patents issued February 6, February 13, February 20 and February 27.

All new patents for the Graphic Arts are reported exclusively for Printing Equipment Engineer by Invention, Inc., an industrial patent research organization in Washington, D. C. Invention, Inc., presently has the only staff in the country that examines, in the U. S. Patent Office, the complete printed copy, drawing by drawing and page by page, every one of the several hundred new patents issued each week. Printing Equipment Engineer is the only trade publication in its field offering a report based on this complete coverage. For copies of the patents listed here specify the patent numbers and send 25c for each separate patent, or 10c for each trade mark or design patent (stamps not accepted) to the Commissioner of Patents, Washington, D. C.

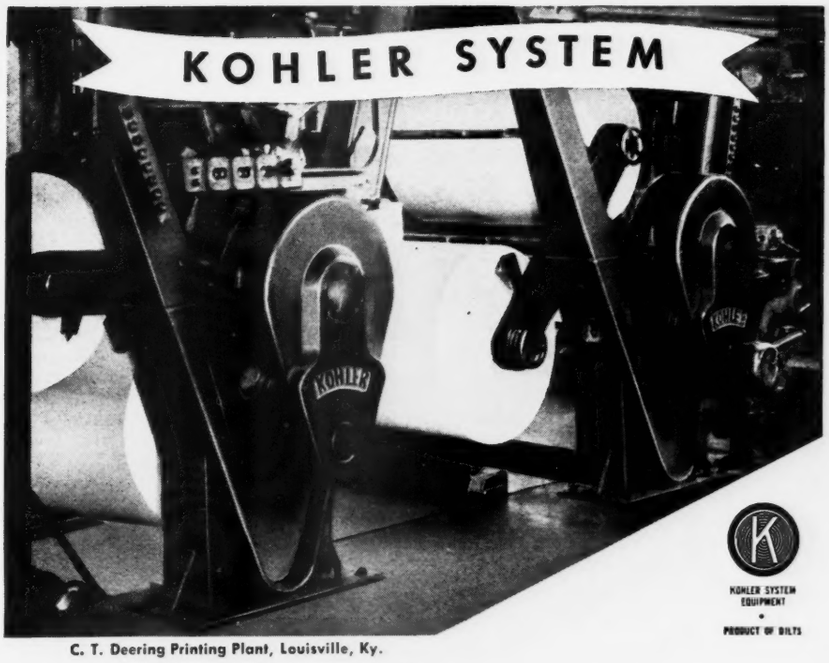
Binding, Cutting, Perforation

2,540,227. POWER CORNER CUTTER is for trimming corners of sheets of paper. It comprises a horizontal table on a frame with a fixed cutting die. A cutter head and a slide are mounted for vertical movement on the frame. Cutter head carries a cutter. The slide has a work-engaging foot. Power operated means include a rod attached to and extending downwardly from the cutter head. There is a rod attached to and extending downwardly from the slide parallel with the first said rod. A compresion spring on the second rod is disposed between the cutter head and a stop on the bottom of the second rod for resiliently effecting downward movement of the slide from the cutter rod. In addition to trimming corners of a stack of sheets to any desired contour, the machine may be adapted to cut holes, slots, etc. Invented by Roy Aberle, Portland, Me. Assigned to Southworth Machine Co., Portland, Me. Application January 9, 1947. 6 claims.

2,541,367. STITCHING MACHINE is for stitching books and pamphlets and the like in which the work is partially opened V fashion and fed through a stitcher so that the longitudinal fold or spine is exposed to the stitcher. A series of perforators or needles are equidistantly spaced and project beyond the periphery of a circular rotor. Such periphery has a cross-section which is complementary with converging inclined surfaces over which the work is guided, and outer ends of needles are grooved to engage a tensioned length of thread. The needles are individually displaceable relative to the periphery of the disc during each threading operation to compensate for forward movement of the work. Invented by Alfred J. Kitcat, Somerset West, Cape Province, Union of South Africa. Unassigned. Application June 11, 1949; in Great Britain July 12, 1948. 10 claims.

Composing Room Equipment

2,540,523. LUBRICATING MECHANISM FOR STRIP CASTING MACHINES is provided which has a reservoir and valve means normally closed and intermittently opened for controling flow of lubricant from the reservoir. The outlet from the reservoir past the valve means communicates with a small secondary lubricant chamber having an outlet into the molten metal passage



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of the strip casting machine, whereby lubricant from the reservoir is admitted at predetermined intervals into the secondary chamber and is withdrawn from the chamber into the molten metal passage of the strip casting machine. The secondary chamber is provided with a backflow check valve at its outlet and for preventing molten metal from entering the chamber. Machine is for making printer's leads, slugs and rules. Invented by Harry L. Horn, Dallas, Tex. Unassigned. Application June 5, 1948. 3 claims.

2,541,823. KEYBOARD for line casting machines assures the release of matrices even though the keys be but slightly displaced or subjected to only light pressure. Leverage arrangement is such that when key is manipulated upward movement of the matrix-releasing rod from its position of rest is effected. The key is restored by the descent of the rod to its position of rest when pressure on the key is relieved. Invented by Jean M. Lobit, Rosebank, N. Y. Unassigned. Application March 5, 1946. 1 claim.

2,542,572. QUADDING APPARATUS. In machines having automatic quadding apparatus, mechanical means connected to the locking shafts and coordinated with the vertical movements of the justification block are provided for operating the jaws positioned above and at opposite ends of the justification block. In accordance with the present invention, such mechanical means are eliminated and their functions replaced by simple toggle linkages. Invented by Loran O. Rhodes, Craig, Colo. Unassigned. Application May 14, 1948. 2 claims.

2,542,599. TYPOGRAPHICAL SLUG CASTING MACHINE. The combination is shown of a mold, a line receptacle or holder mounted for movement into and out of contact with the mold, and a reciprocable wedge block mounted in fixed guideways and connected with the receptacle for clamping the matrix line against the mold preparatory to the casting operation. It includes a stationary metal pot to cooperate with the mold and wherein the fixed guideways for the wedge block are mounted in an integral bracket member attached to the pot. Invented by Ransom H. Turner, Great Neck, N. Y. Assigned to Mergenthaler Linotype Co., Brooklyn, N. Y. Application October 31, 1942. 17 claims.

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Feeding, Folding, Delivery

2,540,862. PRINTING TABLE CONVEYOR for pattern printing uses an endless conveyor belt to serve as a traveling carrier for the web to be printed. The belt is trained around two supporting rollers which are mounted to rotate on parallel axis. Laterally along the edges of the conveyor belt are aranged two endless metal bands which are mounted on wheels to be revolved by them so that the edges of the metal band facing the conveyor belt there, so that when revolving the metal overlap the respective edges of the latter and are connected at least here and bands, the conveyor belt together with the web lying thereon will be taken along. Invented by Fritz Buser, Wiler, Switzerland. Unassigned. Application May 29, 1948; in Switzerland, August 14, 1947. 6 claims.

2,542,089. COLLATING MACHINE is adjustable to operate effectively with cardboard, 20 lb. paper, carbon paper, tissue, etc., and to form sets of varying number of sheets and to transport the sets to form a single pile. This is accomplished principally by pneumatically operated devices in conjunction with a bin structure and conveyor belt. Invented by Charles L. Leifer, New York, N. Y. Unassigned. Application August 30, 1946. 7 claims.

Miscellaneous

2,542,205. CLOTH COVERED PRINTING ROLLERS for lithographing presses may be washed safely and without deforming roller surface with this device. The washer is made up of a pair of parallel driven rolls having oppositely pitched grooves formed in the surfaces continuously along the entire length of the rolls, the adjacent sides of which move in opposite directions. The rolls are rotated at different surface speeds and the space between the rolls constitutes a saddle in which may be placed a cloth covered roller to be cleaned. Invented by Ralph H. Mort, Portland, Ore. Unassigned. Application June 7, 1946. 4 claims.

2,542,623. MACHINE FOR SPRAYING THE EDGES OF BOOKS. Edges of books are colored by this apparatus. The invention comprises a spraying device and a reciprocating motive means for feeding the books, supplied by an attendant, to and through the spraying device upon their edges and in close

side-by-side engagement so as to expose only the edges for spraying of one or three edges. There is an arrangement whereby the movement of the books, as they are supplied to the machine, will automatically initiate and determine the duration of the spraying operation. Invented by Herman S. Cahen, University Heights, O. Assigned to The Commercial Bookbinding Co., Cleveland, O. Application March 27, 1946. 9 claims.

2,543,047. METHOD OF PRINTING THROUGH CELLULAR PLATES which are described in Murray patents of this report under the heading "Plate Making", is disclosed. Present invention claims a method of printing with a cellular plate of this type in which the step of re-inking the plate before each printing operation is accomplished by raising the transparent sheet from the rear surface and flowing onto the rear surface the printing ink at an average pressure below the atmospheric pressure at the front (printing surface) of the plate, but not sufficiently below to overcome the surface tension which tends to hold the printing fluid level with the narow front openings in the plate. Invented by Alexander Murray, Rochester, N. Y. Assigned to Eastman Kodak Co., Rochester, N. Y. Application May 21, 1947. 3 claims.

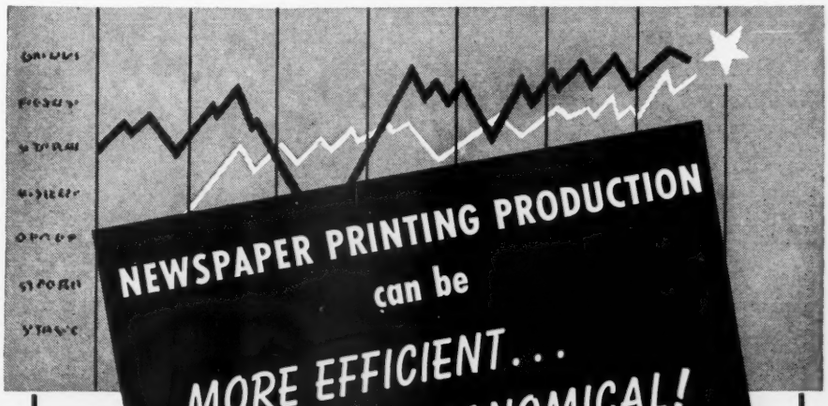
Plate Making

2,542,511. SIGNAL FOR CASTING APPARATUS. The signal device for use in a stereotype plate-casting box comprises a hollow housing supportable in the box, an elongated rod slidable through the housing, a float at one end of the rod for engagement by molten type metal in the box, a visual signal element on the other end of the rod, and means attachable to the rod in adjusted position lengthwise of the latter to support the rod from the housing in selected position of vertical adjustment relative to the latter. Housing has a spring thereon compressible by the box when the housing is disposed in the box to frictionally engage the housing with the inner surfaces of the box side walls. Invented by Stephen I. Griglak, Manassas, Va. Unassigned. Application March 22, 1949. 2 claims.

2,542,651. APPARATUS FOR SCORCHING AND PRESHRINKING MATS. Apparatus includes an air reservoir, a heating chamber above the air reservoir, a perforated wall separating the said two parts, and a cover for covering the mat, placed upon the upper wall of the heating chamber. Means are provided for supplying air to the reservoir and through the said perforated wall to the chamber where the air is heated. Cover is mounted to be raised a short distance above the upper wall of the heating chamber. The cover can be secured in the raised position to permit the mat to float between the upper wall of heating chamber and the cover. Invented by Edward C. Gadlen, Los Angeles, Calif. Unassigned. Application August 25, 1947. 3 claims.

2,543,013. PRINTING PLATE comprises a sheet of solid material, either plastic or metal, with cells uniformly distributed over the plate, with a narrow opening from each cell through one surface (the printing surface) of the plate. The diameter of each opening is of capillary size, there being at least 10,000 cells per sq. in. The total area of the openings is less than 10 percent of the whole printing area. There is a relatively large opening from each cell through the other surface of the sheet. A removable transparent solid layer over the surface covers the relatively large openings. The cells are filled with ink from the rear. Ink is expelled from narrow front openings differentially in accordance with a radiant energy image negative. Invented by Courtney Q. Glassey, Rochester, N. Y. Assigned to Eastman Kodak Co., Rochester, N. Y. Application April 30, 1947. 9 claims.

2,543,045. CELLULAR PRINTING PLATE of patent No. 2,543,045 differs from that of patent No. 2,543,013 in that part of each cell away from the opening thereof is filled with a plastic material having a coefficient of thermal expansion at least twice as great as that of the printing ink with which the rest of the cell is filled when printing. The contents of the cells are heated by illuminating the rear surface of the plate with a radiant energy image absorbable by the contents, the image being negative to that to be printed to expel ink through the narrow openings and onto a surface to be printed. Plate is inked from the front between printing operations. Printing operation comprises contacting the front surface of the plate with the paper surface to be printed. A highly intense line of light is caused to sweep the negative. This may be accomplished in a press as



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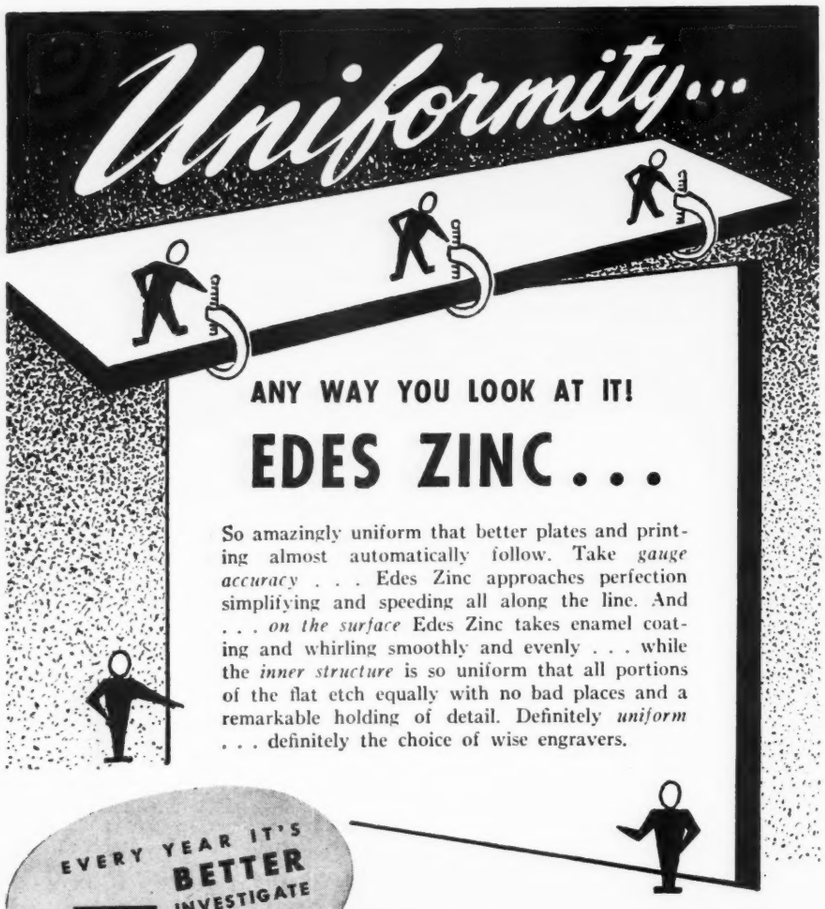
paper moves forward continuously, the line of light being stationary relative to the press. Invented by Alexander Murray, Rochester, N. Y. Assigned to Eastman Kodak Co., Rochester, N. Y. Application May 21, 1947. 7 claims.

2,543,046. CELLULAR PRINTING PLATE and method of manufacture provides for preparing a cellular printing plate and placing a resist stencil in halftone pattern on the surface of a sheet of etchable material which transmits actinic radiation but has a density with respect thereto proportional to its thickness. The halftone spots of the sheet left exposed by the stencil are etched and the etching is discontinued when the cavities thereby created are nearly but not quite through the sheet. A photo-resist is applied to the other surface of the sheet, and the latter resist is exposed to actinic radiation through the sheet. Latter resist is processed to expose a small spot of the other surface over each cavity at the point where maximum actinic exposure due to minimum thickness of the sheet occurs. A narrow orifice is etched at each spot through to the corresponding cavity. Invented by Alexander Murray, Rochester, N. Y. Assigned to Eastman Kodak Co., Rochester, N. Y. Application May 21, 1947. 1 claim.

2,543,393. METHOD OF PREPARING INTAGLIO PRINTING PLATES. Photographic operations are used to prepare a resist which is then used in a conventional way to etch a desired printing surface. The method is carried out by forming a screen positive of subject matter to be reproduced, exposing the screen positive in a contact photographic printing operation upon a layer of bichromated gelatin, spacing the screen positive from the resist and exposing from a diffused source of light to lose the effect of the screen formation upon the sensitized gelatin, developing the gelatin to form a resist and etching a surface through the gelatin resist to produce an intaglio printing surface. Invented by Theodore Whelden, West Englewood, N. J. Assigned to Publication Corp., New York, N. Y. Application December 31, 1948. 3 claims.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Printing Inks

2,541,505. PRINTING INK comprises an organic liquid carrier, a linseed oil-extended rosin-modified maleic glycerol alkyd resinous binder and a pigment, such as carbon black. The liquid carrier consists of a mixture of paraffin hydrocarbon liquid which distills within the range of 301-311 deg. C. and which is a non-solvent for the resinous binder, together with an aromatic hydrocarbon liquid which distills within the range of 301-311 deg. C., is miscible with the paraffin and is a solvent for the binder. Invented by Joseph G. Curado, Bergen County, N. J. Assigned to Sun Chemical Corp, New York, N. Y. Application March 19, 1946. 3 claims.

2,543,727. MOISTURE SETTABLE PRINTING INK comprises a pigment, e.g., titanium white, alkali blue, carbon black, etc., dispersed in a vehicle comprising a highly acid unsaturated, and substantially unesterified reaction product of a butendioic acid and a drying oil, dissolved in a liquid, water-soluble solvent of the class consisting of diethylene glycol, dipropylene glycol and diethylene glycol monoethyl ether. The proportion of the acid to drying oil is within the limits of from 18.5 parts by weight of acid to 81.5 of drying oil. Chinawood, linseed, oiticica, dehydrated castor and other oils may be used. Invented by Raymond F. Lecture, Chicago, Ill., and Allen T. Sedgwick, San Leandro, Calif. Assigned to Interchemical Corp., New York, N. Y. Application September 6, 1947. 9 claims.

Printing Presses and Equipment

2,540,326. SCREEN PRINTING APPARATUS utilizes a rotatable (circular) silk screen printing frame having a plurality of carriers thereon which provides means of quickly and accurately printing selected characters individually in the proper order and alignment on an object disposed thereon to conform to any desired copy. The movable printing base supports the object to be printed and automatically moves the distance required to produce the proper spacing between individual characters after each such character is printed. Device is useful where it is desired to print a large number of objects, each with different copy. It may be hand-operated or semi-automatic and is an improvement over the subject matter of patent No. 2,532,802 of December 5, 1950. Invented by Harry R. Farwell, Quincy, Ill. Unassigned. Application January 8, 1948. 14 claims.

2,540,667. SHEET FED OFFSET PERFECTING PRESS. In a sheet-fed perfecting offset press, a pair of cooperating blanket cylinders are arranged in impression relation with each other and adapted to print on opposite sides of

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sheets passing between them. A plate cylinder is in operative contact with each of the blanket cylinders and there are sheet grippers on one of the blanket cylinders. A feed-impression cylinder is arranged to transfer sheets to the latter blanket cylinder and to squeeze the air from between the sheets and that cylinder prior to their passage between the blanket cylinders. Invented by Charles W. Harrold, University Heights, and Alfred S. Harris, Cleveland Heights, O. Assigned to Harris-Seybold Co., Cleveland, O. Application July 13, 1945. 6 claims.

2,540,690. ROTARY OFFSET SHEET PERFECTING PRESS is provided in which the arrangement is such as to facilitate work upon the press. Means are provided for feeding the sheets downwardly into the space between two printing units, thereby bringing the cylinders of the two units to relatively low levels convenient for the press operators. The inking mechanisms extend upwardly from the plate cylinders, which is the most advantageous position for inkers. Invented by Howard A. Pritchard, Hiram, O. Assigned to Harris-Seybold Co., Cleveland, O. Application July 13, 1945. 9 claims.

2,541,254. BLANKET TENSIONING MEANS. Newspaper printing machines in which soft blankets are used, as well as magazine presses and planographic offset machines, can use this tensioning device. Tensioning is effected by improving the blanket securing means. Such means comprises a fully rotatable reel rod, a manually rotatable member, and a resilient driving connection between the reel rod and the manually rotatable member. The connection includes a worm cooperating with a worm wheel and a spring through which rotative force applied to the manually rotatable member is yieldingly transmitted to the reel rod. Invented by William F. Huck, Forest Hills, and Franz Heller, Mount Vernon, N. Y., and Alexander J. Albrecht, West New York, N. J. Assigned to R. Hoe & Co., Inc., New York, N. Y. Application May 26, 1945. 12 claims.

2,542,073. THE SHEET-FED LITHOGRAPHIC PRINTING PRESS comprises a combined plate and impression cylinder including a lithographic plate segment and an impression segment, inking and wetting means operative upon the lithographic plate segment, an offset cylinder of half of the diameter of the combined cylinder and adapted to press against the combined cylinder, sheet feeding means constructed and arranged to introduce a sheet between the cylinders at each presentation of the impression segment to the offset cylinder and means for transferring an inked image to the impression segment preparatory to presentation of the impression segment to the offset cylinder and sheet. The transferring means includes a supplemental cylinder of substantially the diameter of the offset cylinder and means bringing the supplemental cylinder into printing engagement with the impression segment but not the plate segment of the combined cylinder. Means are also provided for maintaining separation of the supplemental cylinder and the combined cylinder and for rendering the separation—maintaining means effective upon failure of feed of a sheet. Invented by Roy Aberle, Portland, Me. Assigned to Southworth Machine Co., Portland, Me. Application Sept. 20, 1946. 10 claims.

2,542,229. PLATE CYLINDER AND INK ROLL MOUNTING FOR PRINTING PRESSES. The invention provides in a multiple color printing press a means of mounting and adjusting the ink rolls relative to the plate cylinders in such a manner that the ink roll adjustment remains fixed even though a plate cylinder may be shifted back and forth into and out of contact with the impression cylinder. The design, location and manner of adjustment of the plate cylinders and ink rolls are such as to permit use of an impression roll of considerably larger size than has been possible previously. Invented by Albert M. Bojanower and Richard D. Spearman, Downey, Calif. Unassigned. Application December 16, 1946. 3 claims.

2,542,705. THIS LETTER PRESS PRINTING MACHINE includes a frame, a flat form bed mounted for reciprocation on the frame, an impression cylinder rotatably mounted on the frame above the bed, and a lever pivoted at one end to the frame and operatively connected at the other end with the bed. Drive means on the frame reciprocate the lever to reciprocate the bed. Buffer means on the frame connected with the lever cushion the stroke reversal during the reciprocation of the lever and the bed. Machine has a continuously rotating impression cylinder making one revolution only during the time that the bed makes a complete reciprocation, that is, forward stroke and return stroke. Invented by Arthur W. Ranger, Brighton, England. Unassigned. Application March 8, 1946; in Great Britain March 21, 1945. 6 claims.

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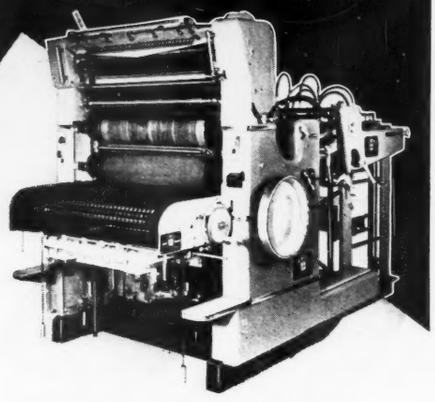

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2,542,711. INK SUPPLYING APPARATUS comprises parts which make a container with an outlet opening adapted to deliver the ink in exact measure to a distributing roll that transfers the fluid to additional rolls or other parts by which it is spread over the type. Container is of such design that the outlet opening can be adjusted to different degrees along its length. Outlet opening includes a flexible plate normally in sloping position near the roller. The side members for supporting ends of roller and plate make therewith a reservoir for the ink. Plate is supported on a bar and the bar is pivotally mounted in the side members. Lever members, having scales, are spaced transversely to engage plate independently at spaced points to control amount of ink applied to roller. Invented by Michael F. Saunders, Brooklyn, N. Y. Unassigned. Application March 31, 1948. 1 claim.

2,542,867. TWO-COLOR ROTARY OFFSET SHEET PRESS. The usual work space between the units of a two-color press is eliminated, thereby promoting the compactness and economy desirable in a small press. The second unit is disposed at a low level as compared with the first; the operator may stand at the delivery side of the second unit and reach over that unit in order to work on the cylinders and inkers of the first unit. A single double-size transfer cylinder takes a sheet from lower left-hand quadrant of the first impression cylinder and delivers it to the upper right-hand quadrant of the second impression cylinder. Invented by Charles W. Harrold, University Heights, O. Assigned to Harris-Seybold Co., Cleveland, O. Application July 30, 1946. 5 claims.

Federated's Houston Office—Pictured above is the recently completed office building of Federated Metals Div., American Smelting and Refining Co., located at 9000 Market St., Houston, Tex. The building is being utilized by the company's local administrative personnel. Of concrete block exterior walls, faced with red and buff brick veneer, the construction includes acoustical tile ceilings, fluorescent lighting, and concrete floors with asphalt tiling.

2,543,219. CUTTING ATTACHMENT FOR PRINTING PRESSES. An improvement is provided in a cutting attachment for printing presses having a stationary bed formed to support type and a movable platen for carrying the sheets to be printed to the bed and pressing them against the type supported thereon. Cooperating paper cutting members are mounted on the upper edge portions of the bed and platen for cutting those edge portions of the paper which are presented uppermost to the press. The cutting member of the platen is arranged at or above the upper edge of the platen so that the paper cut by the cutting members from the sheet being printed will be discharged over the upper edge of the platen on which paper cut from the sheets is deposited for discharge from the printing press. Invented by Loyal R. Addington, Wabash, Ind. Assigned to Art Metal Construction Co., Jamestown, N. Y. Application April 13, 1948. 3 claims.

2,543,255. PRINTING PLATE LOCK-UP DEVICE comprises a member having a

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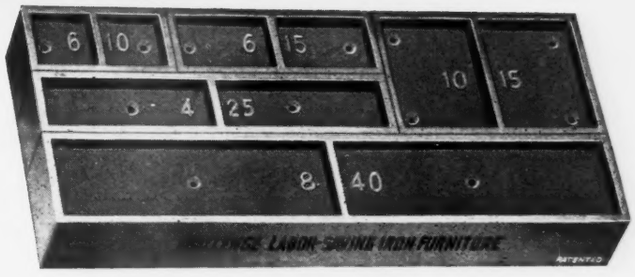

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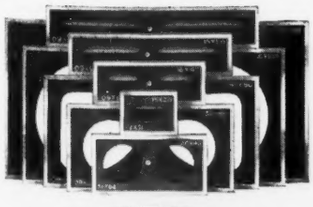

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projection thereon, and means for securing the member to the cylinder of a rotating press. The projection is adapted to extend into the aperture in the plate. Member can be adjusted coaxially and circumferentially of the cylinder. No portion of the projection extends above the highest point of the printing plate. The coaxial and circumferential movement affords adjustment of the plate on a bias with respect to the cylinder. Invented by J. Russell Parrish, Des Moines, Ia. Assigned to Meredith Publishing Co., Des Moines, Ia. Application March 6, 1948. 7 claims.

Court Decision

A New York State Supreme Court decision was issued recently restraining Sidney Blau and Electron Intaglio Corp., and others, from manufacturing and selling the Electron-O-Plate platemaking machine. At the same time the court ordered Blau and the Electron Intaglio Corp., and others, to account to Electron Lithoplate Corp. for loss of profit and damages. J. R. & G. B. Siebold, Inc., is sole distributor for the Electron Lithoplate Corp.

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EXECUTIVE Cs

Harry Eybers has been appointed Production Manager of the Washington *Post*, to succeed T. J. Weir who recently resigned because of ill health. Eybers served as production manager of the Salt Lake City (Utah) *Tribune* and *Telegram* for the past seven years and in the same capacity with the Anaconda chain of newspapers in Montana for five years. He is a member of the ANPA Mechanical Committee. Earlier in his career, he was associated with the Sioux City (Ia.) *Tribune* as composing room foreman.

Louis Rossetto recently was named Director of Research of the Mergenthaler Linotype Co. and has assumed active direction of the company's research activities. He succeeds Col. Gordon B. Welch, who has been named President of Davidson Corporation, a subsidiary of Linotype. Shortly after joining Mergenthaler in 1948, Rossetto was named assistant director of research, a position he held until his recent appointment. He is a graduate of the College of the City of New York and has attended the University of Pennsylvania. Formerly associated with Westinghouse Mfg. Co., Rossetto served during World War II with U. S. Army Ordnance. He holds the Legion of Merit medal for his work in the latter capacity.

Louis Rossetto, named Director of Research of the Mergenthaler Linotype Co.

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Christian R. Kaddeland was honored recently at a meeting of the Chicago Litho Club in completing 50 years of service to the Graphic Arts industry as

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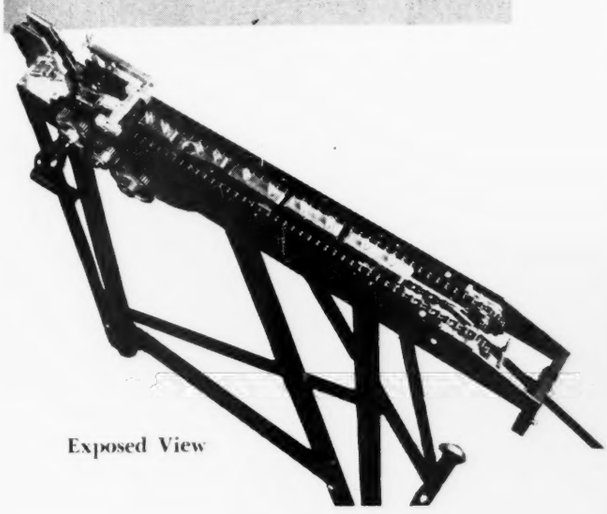
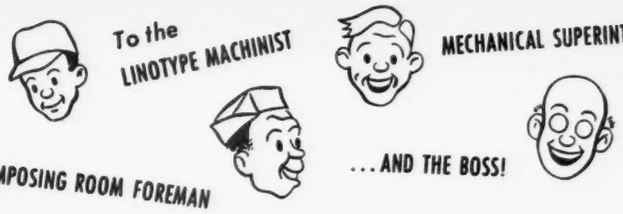


Exposed View



THE HARTCO Spaceband Machine automatically—*and thoroughly* cleans metal accumulations from the casting point, and lubricates sleeve and wedge on both sides and between.

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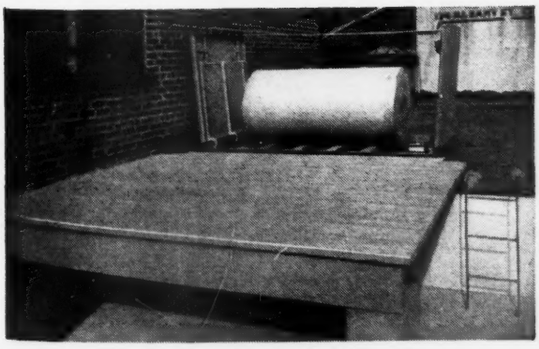

Figure I—Loading Position

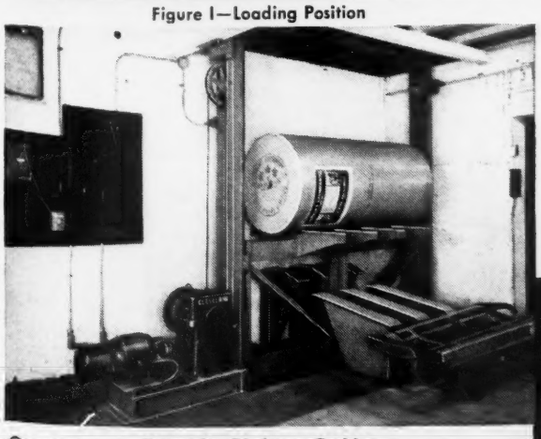

Figure II—Discharge Position

Heavy newsprint rolls take and often give a beating on their way from truck to storage or press room. Cumbersome... unwieldy—they can be dangerous to handle and easily damaged.

A Gifford-Wood lowering and raising machine substitutes electric power for muscle power, money-saving efficiency for wasteful inutility. Whether your unloading platform is above or below storage or press room, this machine will handle heavy rolls with a minimum of effort. It operates as simply as this—the roll is fed to the conveyor, loading fingers gently but firmly cradle the roll as it is rapidly raised or lowered. At the end of its run, the roll is automatically discharged to platform, storage room or waiting conveyance. This is the efficient way, the safe way to reduce newsprint damage and employee hazards. It is the simple but sure method to speed up handling in your plant.

ALSO AVAILABLE PNEUMATICALLY-OPERATED FOR LOWERING ROLLS

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● Up — Up — Up go time and labor costs—so down—down—down must go time-and-labor-wasting operations. The Rosback Saddle Gang Stitcher does exactly that.

This stitcher eliminates entirely the hand-collating of signatures — collating and stitching are combined into a single operation. Labor costs are cut at least 50% as compared to hand stitching.

The stitching operation is completely automatic. Operators simply feed the signatures onto the saddle and the machine does *both* the collating and stitching in one smooth, steady, fast-moving, automatic operation. The stitching is spaced accurately and uniformly—automatically staggered so stitches do not pile up to break out under pressure of cutter clamp when thin books are trimmed. You not only save money with a Rosback, but you also keep your stitching on schedule.

TWO MODELS

Rosback Saddle Gang Stitchers are made in two models: Model No. 204 places any number of wire stitches from 1 to 4 inclusive, and No. 210 any number from 1 to 10 inclusive, in each book or booklet, or in each gang when job is printed two-or-more-up.

Because it is easy to set, the Rosback Saddle Gang Stitcher shows nearly as big a time saving per thousand on runs of 1,000 or 2,000 as on 25,000 and up.

Your Rosback Dealer will be glad to help you select the Rosback Saddle Gang Stitcher that will best serve your needs. Or, write us for descriptive bulletin that gives all the unusual advantages of the Rosback Saddle Gang Stitcher.

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an engineer and designer. He was presented with a plaque by Henri Peyrebrune, Vice President in Charge of Engineering, Miehle Printing Press and Mfg. Co. Kaddeland has served as an engineer and consultant for R. Hoe & Co., Whitlock Company, Premier Potter Co., Harris-Seybold Co., and in recent years with the Miehle company. He has been associated with the development and design of sheet fed offset presses, roll fed offset presses, postal card presses, perforating and sheeting presses for stamps.

Don Grant, formerly with Harris Seybold Co., has joined R. R. Robertson Co. as Sales Representative. With a background of 18 years in offset lithography as cameraman, platemaker, and plant superintendent, Grant has served in Chemical Sales, Research, and as technical advisor in promotional advertising for the past six years.

He has taught photographic and lithographic courses at the New York Trade School and Rochester Institute of Technology.

Rand Avery-Gordon Taylor, Inc., Boston, has announced the appointment of the following officers: Robert A. Whidden, Chairman of the Board; Eugene H. Gordon, President and Manager; and John R. Rees, Vice President and Treasurer. Named directors of the company are: E. Thatcher Avery, Mr. Gordon, Maynard Hutchinson, Robert Rand, G. Gehman Taylor, Charles D. Temple, and Mr. Whidden.

George J. Stickley, appointed General Sales Manager of Ernest Payne Corp., according to an announcement by Ernest Payne, President. Stickley has been associated with the printing business in sales and executive capacities since 1936 when he started with Brantjen & Kluge, Inc. He resigned as domestic sales manager for Banthin Engineering Co. to accept his present position. His new position will place him in charge of the company's entire sales organization.

John W. Thompson, President of the Monomelt Company since 1934, passed away on February 28. Born in Ireland in 1892, Mr. Thompson was a graduate of Trinity College. He came to this country prior to World War I, but returned to England to serve as a member

of the Royal Air Force during that conflict. He came back to the United States following his war service and earned the reputation as a designer of new machinery and improved methods for the Graphic Arts Industry.

Emory W. Worthington has been appointed Vice President in Charge of Mechanical Development of Bjorksten Research Laboratories, according to an

Emory W. Worthington, appointed Vice President in Charge of Mechanical Development, Bjorksten Research Laboratories.

announcement by Dr. Johan Bjorksten, President. Worthington will make his headquarters at the Madison, Wis., office of the Laboratories, and will visit the Chicago and New York offices regularly. He recently completed a four months European tour of printing plants. Formerly vice president and chief engineer of Babcock Printing Press Corp., he also has been associated with the Champlain Co., Inc., and Goss Printing Press Co. in various engineering positions.

Walter E. Soderstrom was honored recently at a testimonial luncheon attended by 100 members of the Metropolitan Lithographers Assoc., Inc., in New York. J. B. Smith, jr., Photo Reproduction Corp., presented a chest of sterling silver flatware to Soderstrom, who has served as head of the MLA for the past ten years. He will be succeeded by E. Ames Hilperts. Speakers at the luncheon were William M. Winship, jr., MLA President, and James L. Murphy, Past President of the Association. Soderstrom is Executive Vice President of the Natl. Assoc. of Photo-Lithographers.

Earle Bensing, an official and one of the founders of Bensing Bros. and Deeney, died on March 12 while vacationing with his wife in Bermuda. He was 50 years old. Bensing was associated at one time with Charles Eneu Johnson Co. and Crescent Ink Co. In 1936 he joined with his brothers, Roy and Harold, and James J. Deeney, in forming Bensing Bros. and Deeney. At the time of his death he headed the oil ink division of the company, and was vice president of its corporations in Pennsylvania and Massachusetts, as well as secretary of its Illinois corporation. He was a member of the Poor Richard Club, the Philadelphia Club of Printing House Craftsmen and the Litho Club of Philadelphia.

BOOKS

Theory and Practice of Bookbinding

THE third volume in the Government Printing Office Apprentice Training Series entitled *Theory and Practice of Bookbinding* is now available. The 246 page text contains information on bindery operations of interest to all people associated with that department in printing plants, as well as to printers, pressmen, printing students and instructors, printing planners and purchasers, publishers, and others interested in binding as an art or a vocation.

The book includes a simple introduction to the multiplicity of operations performed by the modern bindery in the fields of edition and hand binding, as well as many other miscellaneous spheres. Under edition binding, the text considers folding, bundling, pasting of end sheets and inserts, gathering, collating, stitching and sewing, smashing, trimming, edging, gluing, stamping, etc.

Under hand binding, chapters deal with the preparation for sewing, hand sewing, treatment of end papers, trimming, edge finishing, rounding and back-

Earl C. Shaeffer,
Mechanical Superintendent,
Zanesville Times Recorder; Signal;
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Earl C. Shaeffer, Mechanical Superintendent, The Zanesville Publishing Company, Zanesville, Ohio, employs six Teletypesetter-equipped line-casting machines, each operating at the rate of eight lines per minute.

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All told, in the Zanesville composing room Teletypesetter is used to set baseball box scores (6 ems), basketball, football and bowling scores (8 ems), stock market table, classified advertising (both liners and display text), editorial columns (15, 16 and 24.4 ems) and two column, 10 point news leads.

Mr. Shaeffer states that with Teletypesetter definite gains have been realized in overall efficiency and in speeding the mechanical production of the morning *Times Recorder*, the evening *Signal*. and the *Sunday Times Signal*. Important economies have resulted from the elimination of overtime on straight-matter and ad text type setting.

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ing, covering of printed books, finishings etc. Among the miscellaneous operations treated are the making of boxes, slip case, and pockets; mounting of maps; attaching of locks and shoes; making of pads; and ruling blank forms.

The book also tells how the binder does indexing, numbering, round cornering, perforating, punching, and drilling. It deals with mechanical and loose-leaf binding, and considers the use of glues and adhesives.

Theory and Practice of Bookbinding—Issued by John J. Deviny, Public Printer of the United States. Book consists of 246 pages; size, 6 in. by 9¼ in.; gray linen cover with blue stamping. May be ordered from Supt. of Documents, U. S. Government Printing Office, Washington 25, D.C. Price, $1.50 per copy.

Carnegie Student Trip

Twenty-one senior and graduate students from Carnegie Institute of Technology's Dept. of Printing Management recently completed a five day tour of Chicago printing plants. Firms visited by the group included I. S. Berlin, Newman-Rudolph, Miehle Printing Press and Mfg. Co., Inland Press, R. R. Donnelley and Sons, Alco Gravure, Chicago Rotoprint, Monsen, Inc., Manz Corporation, Rand-McNally, Jahn and Ollier, Pontiac Engraving, and Container Corp. of America. Prof. Homer E. Sterling, Chairman of the Printing Management Dept., and Prof. Bror Zachrisson, visiting faculty member from Sweden, accompanied the group.

Safety Booklets

Four new booklets on safety, designed for distribution by plant foremen or as payroll enclosures, have been prepared by the National Safety Council. The booklets cover safety in the plant, at home and on the highway. One booklet points out why it is better, easier and safer to work in a clean and orderly place. Sample copies may be obtained from National Safety Council, 425 N. Michigan Ave., Chicago 11.

JCM Chicago Plant

J. Curry Mendes Corp. recently opened a Chicago branch plant for the manufacture of Betsy Automatic Collating Machines. The new plant occupies the sixth floor of the 500 S. Clinton St. building which is located immediately south of the Congress St. highway.

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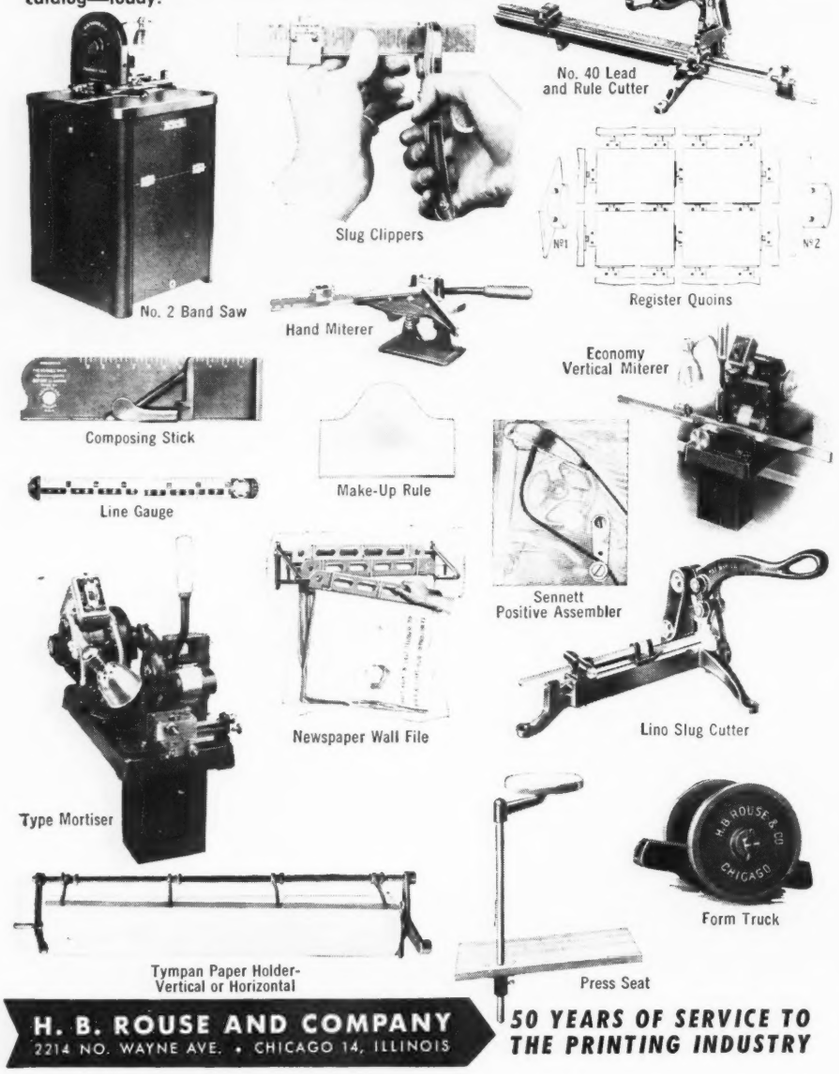

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50 YEARS OF SERVICE TO THE PRINTING INDUSTRY

Northwest Conference

(Continued from Page 46)

done on regular film because the base of regular film is an acetate that will take dye, whereas the base of stripping film is nitrate and will not take dye.

In this connection, he told of a case in which a check printing firm wanted to get a color proof of a check blank in color to sell a job to a bank. To do this in the conventional manner would have involved making up plates and running the proofs off on a press. It was handled photographically in the following manner. Negatives of the check copy were made on stripping film. The exposed silver was removed, leaving a gelatin image on the film. That was dyed as desired. The paper was given a plastic spray and the stripping film mounted on a dry mounting press. The back was taken off and the stripping film gave a reproduction of the check as it would look when printed.

Machinists' Clinic

THE line-casting machinists' clinic included a discussion on the Intertype Fotosetter by Robert V. Ritten, Minneapolis Sales Representative for Intertype Corporation; a talk on Matrix Manufacture and Care by Walter F. Severin, Midwest Assistant Manager, Intertype Corporation, and a description of the Linotype Comet and other Linotype improvements by Rene Leach, Midwest Manager, Mergenthaler Linotype Co. There was also a brief discussion and demonstration of the Linotype Automatic Quadder.

The clinic was directed by William Gordon, Bruce Publishing Co., with George Curle of the Minneapolis *Star* and *Tribune* as co-chairman. The panel of

experts for the question-and-answer period included: Bob Deater and John Hilpman, Mergenthaler Linotype Co.; Mr. Severin, John E. Kirley, Ludlow Typograph Co., Joseph J. Cory, Head Machinist, St. Paul *Dispatch* and *Pioneer Press*; and George Curle, inventor of Monomelt and other printing equipment.

The panel was asked the reasons for breakage of the vise locking screws and replied that it was probably due to a loose tie bolt, improperly adjusted mold wiper or fouled up molds, ejector blades of uneven length hitting unevenly, or mold banking setting out of parallel with the mold.

The question of heavy ejections brought considerable discussion. Hilpman responded with the suggestion that the trouble was probably due to a bell-mouth mold so that a wedging effect on the slug results during ejection.

Ejection Troubles

The next question dealt with a complaint of imperfect ejection on a 6 pt. slug. Deater and Cory said this was possibly because of play in the ejector, molds rounded in the back, lubrication of back mold wiper (with a preference expressed for lard oil applied to the face and a few drops of ordinary oil under the wick), uneven contact on the banking blocks or dull side knives.

Cory cited the banking blocks as a major factor of such trouble. He told of his experience with a stuck slug problem in his plant where the office bought a lot of fractions that were narrower in an attempt to solve the ejection problem. He explained that the machines eject with a $10\frac{1}{2}$ pica ejector on a 12 pica slug because of the necessity of having a $12\frac{1}{2}$ pica mold to take care of want ads. Liners were bought in quantity and the $10\frac{1}{2}$ pica ejection was worked out satisfactorily. Ejector blades are locked on all news machines so they cannot be changed.

However, with the $10\frac{1}{2}$ pica ejector there was a tendency for the 12 pica slug to tip-up on ejection. To overcome this he mounted a first elevator jaw pawl on the front lower part of the ejector plate, mortising the loop through the front edge of the plate, fastening it with two screws. The single pawl broke so he used two pawls by mounting one on top of the other. This arrangement has proved satisfactory.

Lubrication of the back mold wiper was discussed further and the suggestion offered that after lubrication blank slugs should be cast first to prevent oil from getting on the mats. Some machinists reported they use castor oil for lubrication, but others objected to such practice because of the objectionable residue it left.

One mechanical executive reported that on a Model 14, one mold will not justify on 24-pt. type. He said the justification lever block comes up and pushes the bands, but the bands lock and the matrices don't spread, although they seem loose. It was suggested that clearance might be out of adjustment or that the keeper on the mold might be rough in the groove where the toes of the matrices fit. Cory said that wear on clutch shoes might be a factor and advised the use of

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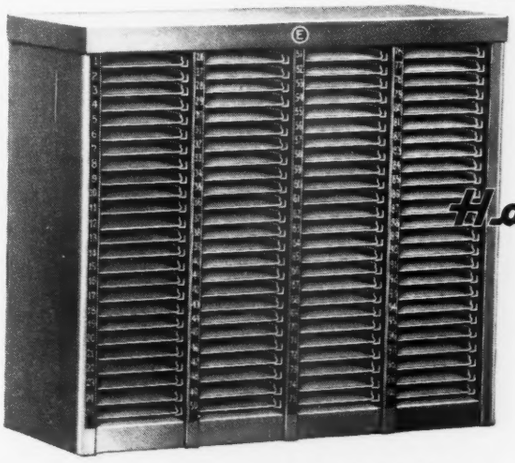

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For galleys 8½"x23½". Clearance on runs is 9-1/16". Width 43"; depth 24⅞"; height 38½".

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new shoes. Gordon suggested the possibility of brass shoe screws.

To the question of why there are no ball bearings on the distributor screws, it was brought out that there isn't enough space between the distributor box and the lower screw to permit such an installation. If the space were widened, the matrix lugs wouldn't contact the screw threads and couldn't run through. It was suggested that a wick oiler might be used on the screw bearings.

One machinist reported the assembler cover becomes grooved and causes matrix assembly trouble. A suggested solution to this was to use a mirror and with the cover in closed position, see that the cover is slightly inside the assembling elevator gate so that a matrix coming down does not strike the gate.

It was stated that on a Model G there was a lag on the 30 pt. caps at the right hand side of the assembler entrance on guides. The reply given to this by the panel was that the weight of the larger mats causes extreme wear on the partitions. Use of a feather was suggested and renewal of partitions when they wear too much.

Oilite Bearing Lubrication

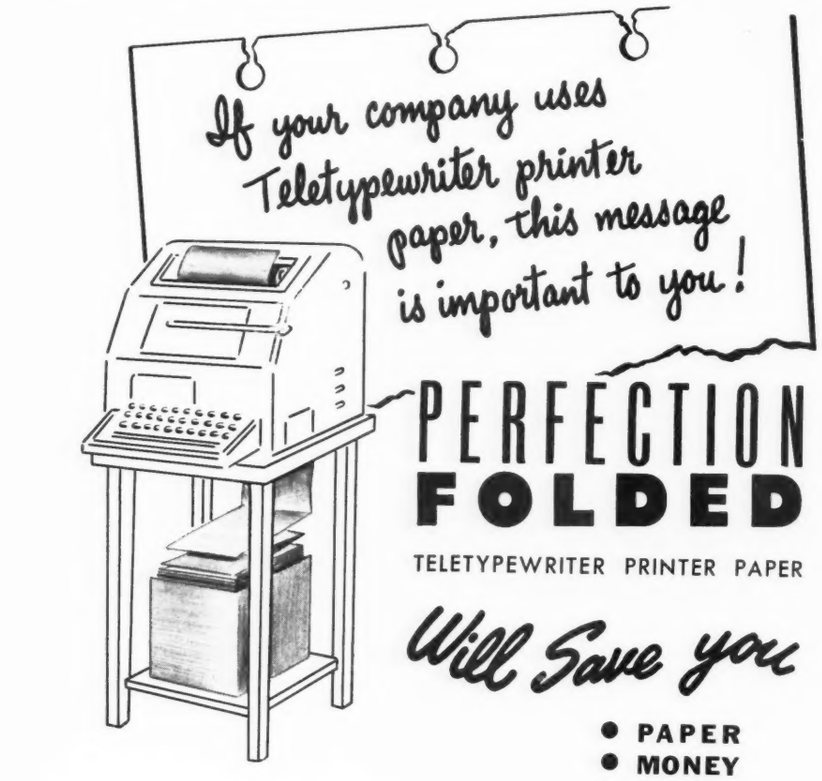
Considerable discussion arose over the proper way to renew lubrication in Oilite bearings on the assembler. One executive reported that the assembler on an Intertype in his plant stalls because of binding on the intermediate shaft and results in loss of fiber gear teeth.

Severin suggested that the assembler be taken out every six months in order that the Oilite bearing may be soaked in 10W oil. Taking the shaft out and oiling it in the conventional manner will not work, he added. Oil with an asphaltum base must be avoided since it will plug the pores of the Oilite bearing. As another possible cause of the assembler trouble, he suggested that the shaft may be loose and the pinions out of pitch, resulting in breakage of the pinion. Cory suggested the bearing housing might be drilled to admit oil, but Hilpman cautioned against drilling into the bearing.

Mixer Distributor Trouble

Mixer distributor trouble was next discussed. One case related was trouble in the magazine when using 30 pt. Gothic and 30 pt. Caslon. When set for the Caslon, it is too loose for Gothic; when tightened up for the Gothic, it causes the Caslon to stick. When the channel entrance was opened to allow the Caslon to pass through properly, the Gothic went through sideways. Properly formed feather guides were suggested. It was emphasized that the bend in the feather must not be too abrupt and that they must be kept clean. Cory explained that a spring effect must be put into the partition with sufficient bend to allow the heaviest mats to pass through. He said he had bent the bottom feather so there is spring tension. Another suggestion offered was to make an adjusting tool by cutting a saw slot in an 8 in. length of ¼ in. round cold rolled steel, put it over the partition and twist it to fit.

More discussion followed on back mold wiper lubrication. A machinist reported complication of a cold face as soon as the back mold wiper was lubricated with Vitaflux. Hilpman stated that the solu-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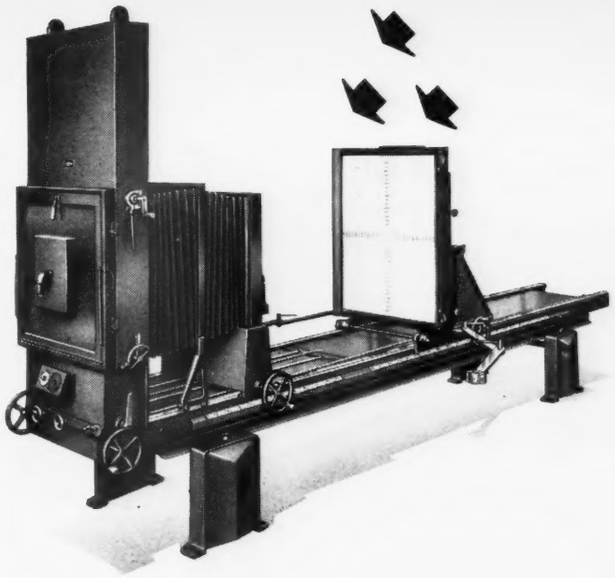

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tion might be to keep the mouthpiece clean and put nothing on it, clean the molds, pull mold disk out after every 8 hr. shift, clean back of mold disk and wipe out mouthpiece. He warned against putting the plunger in oil. Gordon suggested that the cold face might be due to insufficient ventage on the mouthpiece.

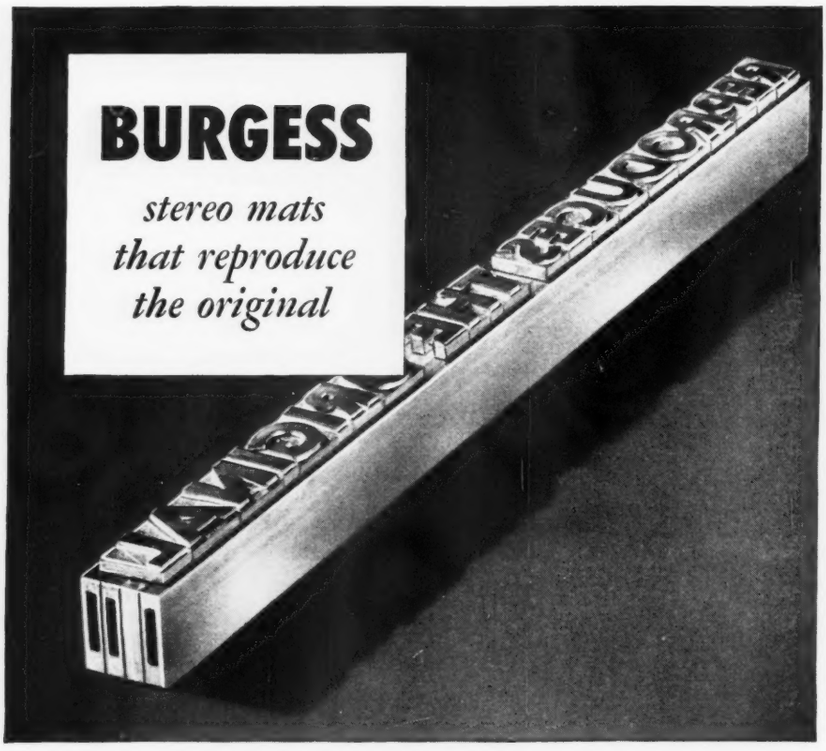
Also brought out in this discussion as usually mentioned at nearly all mechanical clinics was the advice that one of the major factors in good operation is to have clean metal, regularly analyzed and melted at proper temperature.

Monomelt Temperature

The question arose of proper metal temperature in the Monomelt. George Curle suggested a temperature of 550 deg. F. to 570 deg. F. with a lower pot temperature of 510 deg. F. He also emphasized the importance of clean metal. He reported that he used to operate Monomelts on machines in the old Minneapolis *Tribune* at slightly less than 510 deg. F., but the metal had nearly 4 per cent tin and an excellent flowing condition.

Proper oil flow on the Elrod was then discussed. One executive reported that on factory packed diffusion tubes the oil seemed to pour through at times and that at other times he couldn't get any oil out of them. Kirley said that the pellets are hand rolled a id subject to variation. If the shop ordinarily repacked the tubes they might be packing them tighter than the factory pack, necessitating adjustments in the pressure oiler. He cautioned that in changing diffusion tubes, a wrench must be used on the adapter to prevent a twist and consequent oil leak.

Final problem taken up was that of material gathering in the puller wedge at the side of the slide. The answer to this seemed to be proper temperature and the use of a little wax on the slide.



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Stereotype and Pressroom Clinic

EDWARD O'NEIL, Minneapolis *Star* and *Tribune*, presided over the clinic for stereotypers, pressmen and maintenance machinists. He had as co-chairmen, Lawrence Kameron and Chas. Bertram of the St. Paul *Pioneer Press* and *Dispatch*, and Donald Little, Minneapolis *Star* and *Tribune*.

W. C. Pratt discussed the new Goss Universal Press. Using color slides to illustrate his talk, Pratt explained that the new Universal press was designed for plants that have expanded beyond the range of the Tubular, but can't use the Headliner. He explained that the Universal is two plate wide, arch type, semi-cylindrical unit, and is capable of producing four pages straight run or eight collect. The folder can be located in either the center or at the end of the press, and the paper roll equipment can be at one end, at both ends, or with a special mounting, the reels can be placed below the press. Either single or double color cylinders can be mounted directly above the black unit. The color cylinders are equipped with their own inking motions and removable fountain pans. The individual unit has full reversability so that the web from any unit can be led into an adjacent one for picking up spot color, etc.

Plastic Blanket Molding

Next speaker was Rollo S. Lewis, Sales Manager, New Products Div., Beveridge Paper Co., discussing *Plastic Blanket Molding*. Briefly, Lewis reviewed the beginnings of the plastic blanket.

The original blanket was 1 in. thick and didn't work well. The blanket was tested at the Detroit *News* and found that it would give greatly increased shrinkage without increasing the moisture of the mat or changing its texture. The ANPA Research Dept. later came up with a blanket $\frac{1}{8}$ in. thick which started to bring results. Paul Harrington, New York *Journal American*, continued work on the blanket and obtained the necessary shrinkage. The rest of the newspaper operation was brought into line so that printing results began to show up.

Out of these experiments, Lewis said, several important things were learned: the top cylinder of the molding machine must be completely free, so it can easily be revolved by hand; cuts must not be mounted over type high; leaders and column rules must be kept low; and the

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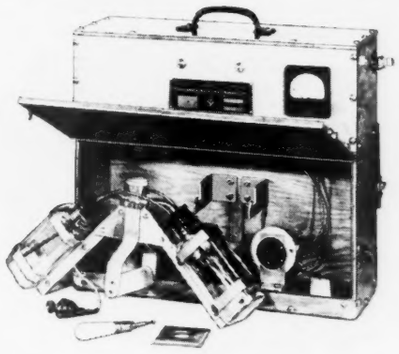

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same packing combinations will not work in every plant.

Plastic Molding Attempts

Illustrating this last point, Lewis described molding attempts in Minneapolis just before the Northwest Mechanical Conference convened. With Jimmy Richardson of the Richardson-Sovde Co., Inc., Minneapolis, Lewis went to the Minneapolis *Star* and *Tribune* to make some test moldings. The plant gave him complete cooperation in the matter of machines and men. Fair results were obtained, but he could not equal the deep shadow tone results the *Star* and *Tribune* was getting with its own molding combination.

By repeated tests, conducted with C. M. Flint, ANPA Research Director, a molded mat was finally obtained that would provide the desired shrinkage and do a good job of printing shadows. In making the *Star* and *Tribune* tests, Lewis said, it was found that the one used most successfully elsewhere wouldn't do the job properly. This was a combination of $\frac{1}{8}$ in. plastic next to the mat, then $\frac{3}{16}$ in. cork and 0.062 in. red fiber board. This combination was good except in the very low tones. By using $\frac{1}{4}$ in. cork and Neoprene (deep mold combination), deep shadows were finally obtained.

As to obtainable results, Lewis said that if a stereotyper is using a $\frac{3}{4}$ in. shrink mat and the publisher decides to knock an inch off the paper roll, the stereotyper can turn the trick. With a plastic blanket an extra $\frac{1}{4}$ in. can be picked up. This is due, he said, to the action of the plastic blanket in tucking in the mat. Lewis explained that $\frac{3}{16}$ in. of the $\frac{1}{4}$ in. is picked up by molding with the plastic blanket and the other $\frac{1}{16}$ in. is picked up in the normal scorching operation. He cautioned that the upper cylinder must be free-spinning. More shrinkage can be gained, he added, if higher shrinkage mats are used.

Tests Statement

In the question and answer period that followed, Flint said that Joseph Goggin, President of Newspaper Publishers Supply Co., recently made the statement that he could mold two plates, one in the conventional manner and the other with the plastic blanket, and demonstrate with straight edge and feeler gauge that the cuts in the plastic molded plate were more nearly type high than in the mold made with cork.

Flint said he went to the laboratory to test this statement. With a newspaper form he made a test on a 2 col. width space. At intervals $\frac{1}{4}$ in. apart were placed a 1 pt. rule, a 2 pt. rule, 3 pt. line, 6 pt. line, 8 pt. line, 12 pt. line and a solid (in the form of a piece of $\frac{1}{2}$ in. wide furniture). Four molding combinations were used: plastic, fiber and plastic; cork and fiber; plastic, cork and fiber and plastic; and fiber and cork. The mats were scorched at the Easton (Pa.) *Express*, placed in a semi-cylindrical casting box and cast. The plates were sectioned and the height of each line measured. The variation in the lines with cork molding from the 1 pt. line to the solid was 0.0065 in.; the variations from either of the plastic-cork combinations (it made no difference whether the fiber was between the cork and plastic or on top of the cork and plastic) was 0.0045 in.; with the all-plastic combination the variation was 0.0025 in., thus proving that everything in the form is nearer the same level when the molding is done with plastic.

ANPA Research Explained

The job of the ANPA research department, Flint emphasized, is to provide the wherewithal to make it possible for newspaper workers to do a better job. "Theoretically, when we have proved to our satisfaction that the job can be done, bearing in mind that our job is research, not sales, not sales application nor engineering, then, theoretically, our job is done and we should go on to something else," said Mr. Flint.

Goggin, taking up the discussion, emphasized that the combination that works at the Des Moines (Ia.) *Register* will not work at Minneapolis or St. Louis. Each plant will have to work out the combination that best meets its own requirements. He expressed the hope that the ANPA research department would some day find the answer to that and be able to provide a way to standardize the process.

The only help that anyone can give a stereotyper in the use of the plastic blan-

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ket, he continued, is to encourage him to seek the advantages which its use in some plants has been proved. The plastic blanket, he said, is the stereotyper's hope for obtaining a plate a little closer to parallel level than is possible with cork.

Plastic Blanket Advantages

Goggin emphasized the addition in advertising space made possible through the use of the plastic blanket, to obtain a saving of space, as well as the economy possible through the use of narrower rolls.

In the question-and-answer period it was brought out that while a combination that includes ¼ in. cork and Neoprene works well, giving a deep impression, there is difficulty in some plants in raising the upper cylinder high enough to take such a combination without excess pressure. This can be taken care of in the newer Goss presses, it was explained, by replacing the eccentric bushing. The view was also expressed that best results in plastic molding may be obtained with a cylinder of 12, 13 or 14 in. diam. rather than with the 20 in. cylinder.

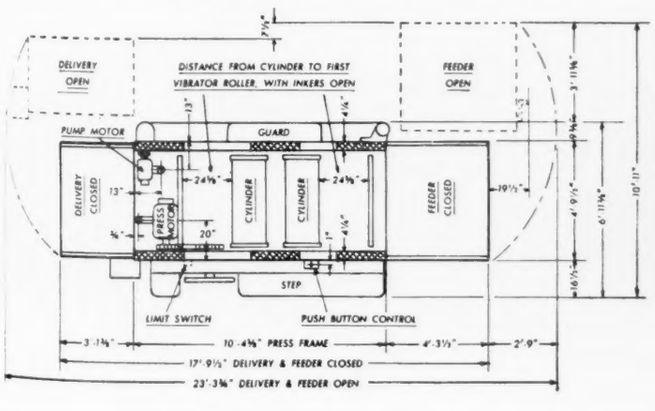
Goggin expressed the opinion that research will possibly find that molding variations will never be licked as long as cork has a part in the process. It was also brought out that in all plastic molding the upper cylinder must be free-spinning and the opinion was offered that all molding might be better if the upper cylinder were never driven. Plastic blankets shipped in during cold weather must be warmed up before unrolling, but they can be worked at 58 deg.

Mailing Room Clinic

THE Mailing Room Clinic had as chairman, Al Johnson of the Minneapolis *Star* and *Tribune*, with Joseph Mayen, of the St. Paul *Dispatch* and *Pioneer Press*, as co-chairman.

Operation of the Mailroom was discussed by James Brodigan, Foreman of the Fargo (N.D.) *Forum* mailing room. He described both daily and Sunday operations in the *Forum* mailing room, relating

FLOOR PLAN OF MILLER 27x41 TY TWO COLOR PRESS



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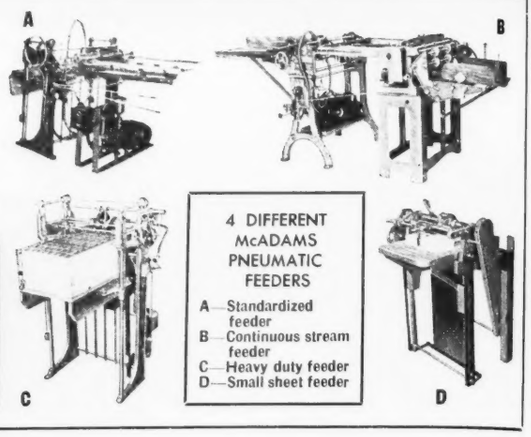

4 DIFFERENT McADAMS PNEUMATIC FEEDERS
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B—Continuous stream feeder
C—Heavy duty feeder
D—Small sheet feeder

how improvisations enable handling of large volume in small space. Much of the efficiency of his department is obtained, he explained, by use of power and gravity conveyors, as well as by the use of portable equipment which can be shifted about to make allowance for special situations.

Twine Tying Machine

Next speaker was W. A. Charnstrom of the B. H. Bunn Co., who spoke on the *Development of the Twine Tying Machine*. He showed how the machine can be adapted to practically any size or shape of bundle with single, double or triple tie.

Twine tie took over a particularly rough job from wire tie, he related. In this instance, an Omaha newspaper was delivering papers to outlying towns by plane and the wire was breaking when the bundle hit the ground. The twine tie method was substituted and was found satisfactory because the twine gave on impact. It was also explained that the guard and tying guide bar can be removed and the machine set into a conveyor line.

Joseph Soderholm, Minneapolis *Star* and *Tribune*, discussed the Sheridan Inserting Machine which is installed at that newspaper. Prior to installing the machine, Soderholm said, the *Star* and *Tribune* was running overtime from 200 to 300 man hours per week in stuffing operations. In the last two months, he said, this overtime has been reduced to zero. Eight men are used on the inserting machine and roto, comic and district sections are handled on it. The average production on the machine is 11,070 per hr., the machine having a rated capacity of 12,500.

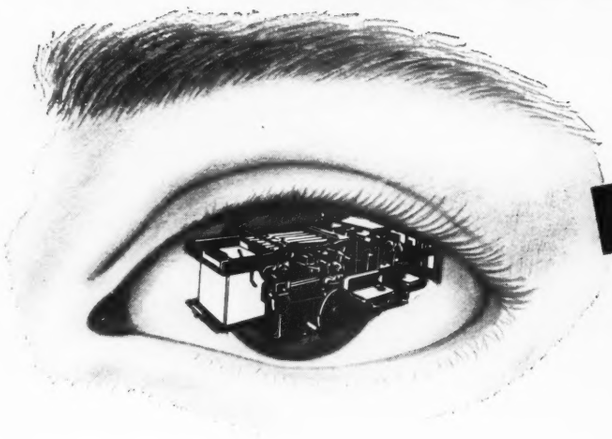
Invites NALC Members—An invitation to visiting Litho Club members to tour Harris-Seybold Co.'s press factory during the National Assoc. of Litho Clubs convention in Cleveland, May 11 and 12, is extended to convention organizers by Harry A. Porter (right), Harris-Seybold's Sales Vice President. Receiving the invitation from left to right are: Andrew Balika, President of the Cleveland Litho Club; Sol D'Alessandro, Co-chairman of the Cleveland Club's convention committee; and Herb Johnson, Chairman of the committee.

Composing Room Clinic

HARVEY SPANYERS, Minneapolis *Star* and *Tribune*, presided over the Composing Room Clinic with William Davies, of the same paper, as his co-chairman. First speaker was R. Hunter Middleton, Director, Dept. of Typeface Design, Ludlow Typograph Co., who discussed *The Story Behind Type and Typography*. Middleton explained that, from the advertiser's viewpoint, it is most important to have the newspaper read and to get a reaction from his advertising. The advertiser takes a printer's troubles for granted. He's interested only in sales. Exhibiting slides, Middleton traced the history of type faces, then demonstrated how type can be used most effectively in producing results for the advertiser. He showed how the redesigning of ads can often greatly enhance their value saleswise.

Manpower Shortage

Next on the program, Fred J. Landon, Director, Printing School, Dunwoody



THE OVER-ALL VISION OF SHEETS AND PRESS WHILE STANDING ON THE FLOOR HELPS TO MAKE THE OPERATION OF MILLER PRESSES COMPARATIVELY SIMPLE.

OPERATION?

Write and obtain more reasons why Millers are easy to operate.

MILLER PRINTING MACHINERY CO.
1103 Reedsdale Street · Pittsburgh 33, Pa.

A Good Man to Know the Imperial Type Metal Man

The Imperial type metal man is a *specialist* in type metal procedure. He's a good man to know—particularly these days when the value of your metal supply is too great to gamble with. You can't afford to trust the maintenance of type metal quality to inexperienced help.

Imperial Type Metal plus Imperial Service assure metal uniformity . . . prevents imperfect casts, machine shutdowns and other production losses due to metal deterioration. You can relieve yourself of all type metal responsibility when you call in the Imperial representative, who will furnish: (1) periodic analysis of your metal, (2) Plus Plan Metal Control, (3) Dross Drum Service and (4) personal counsel—to insure satisfactory performance of your working metal supply day in and day out.

Imperial
TYPE METAL COMPANY
SERVING THE GRAPHIC ARTS *Exclusively*
PHILADELPHIA 34 • NEW YORK 7 • CHICAGO 50

"REGAL" MONOCORK
by
New England

This Press Blanket is by far superior to any cork packing that has ever been available to the industry!

We make this claim with no fear of contradiction. Its perfection is attested to by the fact that we have difficulty in keeping up with the demand.

No matter what your reason may be for not having these blankets on your machine, the simple truth is that you are denying yourself the best. Once you learn what "REGAL" has to offer, you too will be a constant repeat user.

YOU BE THE JUDGE!

NEW ENGLAND
FIBRE BLANKET COMPANY

164 FREMONT STREET
WORCESTER MASSACHUSETTS
BRANCHES: New York—Chicago—San Francisco—Tulsa

NEWSPAPER & PRINTING PLANT ENGINEERING

NEW BUILDINGS • MODERNIZATION
SURVEYS • CONSULTATION

ROBERT W. DICKERSON
2063 EAST 4TH STREET • CLEVELAND 15, OHIO

***The* R & B**
EXTENSION DELIVERIES
for **MIEHLE, BABCOCK, PREMIER** and other presses
•
AUTOMATIC PAPER LIFTS
•
Special purpose equipment for the Graphic Arts Industry
CONSULT US ON YOUR PARTICULAR PROBLEM

THE RATHBUN & BIRD COMPANY, INC.
DESIGNERS AND MANUFACTURERS • FOUNDED 1898
DEPT. PE 379 WEST BROADWAY NEW YORK 12 N. Y.

EARNING POWER?

SOME PEOPLE SAY "UP TO 33% GREATER EARNING POWER" WITH MILLER PRESSES. PROPERLY PRINTED SHEETS OF HIGH QUALITY AT HIGH OPERATING SPEEDS HAVE ALWAYS BEEN POSSIBLE WITH MILLER PRESSES. QUICKER GET-AWAY TOO! WRITE FOR MORE DETAILS.

MILLER PRINTING MACHINERY CO.
1103 Reedsdale Street · Pittsburgh 33, Pa.

Industrial Institute, discussed *Let's Look at the Manpower Shortage*. Noting that apprenticeship training has been practically neglected for 20 years, Landon declared that the training of apprentices is the duty of management and management is unwilling to train its men.

An important phase in solving the manpower shortage in the individual shop, the speaker said, is skillful handling of human relations problems. Pointing out that breaking in new employees is a costly matter, Landon urged that an effort be made to keep present employees. This can be facilitated, he said, by paying attention to the personal problems of the employees. Everyone likes to feel important, he said, and the employees like to have management express to them that they are important to the plant.

Interest in Employees

Be interested in the welfare of the employee and his family, Landon urged the production and mechanical executives. Ask how Joe's boy is doing in service, how Bill's wife is doing after the operation. It may sound silly to you, he said, but it makes for more contented, more productive workers.

The condition of the plant in which employees work is also important in the manpower problem, Landon said. To get the best production per man, the plant must be an attractive, pleasant place in which to work. The lighting and ventilation must be good. It must be clean and kept painted. He also recommended the twice-a-day coffee period and suggested employers could further benefit if they would serve the coffee at no cost, but within the plant.

Work flow is important in conserving manpower and getting the most out of those you are able to hire, the speaker said. The plant should be rearranged, if necessary, to save steps. Machines should be kept in top repair. There should be plenty of leads, slugs, spacing material and other necessaries at hand as well as sufficient equipment, such as saws. He also suggested that the cooperation of the editorial offices and advertising department be sought to get more legible and easier-to-set copy.

BEVERIDGE *Says:*

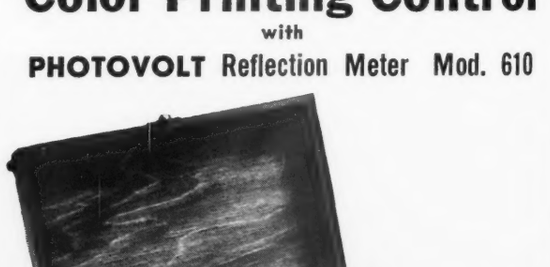
"We're holding the line on the high quality of BEVERIDGE MATS.."

Because we are "holding the line" on high quality and uniformity during these trying times, BEVERIDGE MATS continue to be the finest mats for holding every fine detail and making clean cut impressions. That's why more and more stereotype superintendents are switching to BEVERIDGE MATS. For faithful reproductions and better printing, you can't beat them. Try a shipment.

New Products Division
The Beveridge Paper Company
Indianapolis 4, Indiana

Beveridge Dry Mats

Color Printing Control
with
PHOTOVOLT Reflection Meter Mod. 610



A photoelectric instrument for color and tone measurements in press rooms... for color as well as solid and half-tone blacks ...for control of ink flow ... for standardization of ink color.

PORTABLE, RUGGED, SIMPLE TO OPERATE

Write for Bulletin No. 639 to

PHOTOVOLT CORP.
95 Madison Avenue New York 16, N. Y.

UP Output.... CUT Costs.... and "WIN the Peace"

CALLING...ALL OLD MODELS
Calling *In* All Old Models

Calling the 13,000 owners of old model BAUMFOLDERS (purchased prior to 1940) . . . to exchange them for the modern models . . . from the amazing NEW "Junior Jets" (14x20 and 17x22) to the most versatile Folder ever designed . . . (15 folding sections . . . more than any other Folder ever built) . . . 30x46 . . . 60 . . . BAUMFOLDER.

Of course, your old Model BAUMFOLDER is undoubtedly giving you good folding and isn't worn out . . . BUT, to cut operating costs to the bone . . . to increase folding profits to the "tree-tops", investigate the greater production, greater versatility and latest time-saving features of the MODERN MODELS.

Even if you have long since written the investment off your books . . . and even though your BAUMFOLDER has paid for itself many times over, we invite you to allow us to surprise you by the high price at which we will buy it back . . . AND the LOW price of the Modern Miracle, Many-Purpose, Many-Profit Automatics . . . No cash involved . . . just MODERNIZE and pay part of the greater profit . . . from this point on.

If you knew all the FACTS, we are SURE you would WANT to.

RUSSELL ERNEST BAUM, INC.
615 CHESTNUT STREET • PHILADELPHIA 6, PA.

UP Output.... CUT Costs.... and "WIN the Peace"

Oldest in the Country-
WOOD DRY MATS
First in the Field!
SERVICE
Wood service is built around its staff of technical representatives who have an intimate knowledge and know - how in obtaining good stereotyping performance. Wood customers appreciate the personalized attention given to their foundry requirements. It is this kind of service that has made Wood a big name in mat manufacture.
WOOD FLONG CORP.
HOOSICK FALLS, N. Y.
NEW YORK CITY OFFICE:
551 FIFTH AVE. • NEW YORK 17, N. Y.

Cooperative ANPA Research Explained

(Abstract of an address delivered by C. M. Flint, Director, ANPA Research Dept., Easton, Pa., before the Northwest Newspaper Mechanical Conference, Minneapolis, February 1951.)

IT IS to be expected that work which is being done on a cooperative basis would bear fruit more quickly than work being done in our own research laboratories. In the first place it has been necessary for us to provide suitable facilities, engage personnel and purchase equipment. In the second place the problems which we will tackle at the laboratory will be more fundamental in nature. Fundamental work is slow and costly.

Defends Stereo Investigations

The two principal fundamental investigations at the laboratory are concerned with the stereotyping process and the engraving process.

We chose to study stereotyping because while it does not represent one of the higher cost departments in newspaper production, it does unfortunately introduce many variables in the printing process.

We originally started out to develop a method of handling stereotype mats which would reduce the amount of packing required to a minimum. Our results to date on this investigation have been encouraging, but not entirely satisfactory.

Our studies showed that the type of mold obtained had a great bearing on the strength of the mat in the non-printing areas. During the course of this investigation, Pat Grant of the Philadelphia *Bulletin* called our attention to a plastic material which had essentially the characteristics which we were seeking for an improved mold—namely a material which was practically incompressible and would give us true flow characteristics when molding a mat.

Research with Plastic

It was during these investigations that we found that the plastic had other characteristics which were immediately applicable to stereotype molding. It could produce a mold which would give us up to $^3/_8$ in. additional shrinkage in a given mat without the requirement of additional moisture, and in many cases it could provide a higher fidelity plate than could be achieved by the use of normal molding combinations. Because this development could represent millions of dollars potential savings to publishers and give them increased quality of printing, we temporarily set aside our investigation of the no-pack mat to complete our work on the plastic.

It was during our investigation of the molding characteristics of plastic that we determined it was possible to mold a stereotype mat making use of fluid pressures to accomplish this mold. This is the type of molding used in forming airplane parts and a method of molding which gives us the greatest possible strength of mat in the non-printing areas. We have continued our investigation of fluid pressure molding to the point where we are convinced that it will work. Our next step is to complete the development.

During the course of these studies, we

NEWSPAPER PRESSES • TYPESETTING MACHINES BOUGHT OR SOLD
COMPLETE PLANTS EQUIPPED LARGE OR SMALL
OFFSET PRESSES • BINDERY EQUIPMENT
BEN SHULMAN ASSOCIATES, INC.
500 FIFTH AVENUE, N. Y. 18, N. Y. • BRyant 9-1132

MAINTENANCE COST ?

Durable all steel gearing (not cast iron), heat treated pinions, roller bearings of expensive alloys, automatic oiling of inaccessible parts and precision engineering assure durability and low maintenance cost over the years. Less than 1% of the purchase price per year! Write for more details.

MILLER PRINTING MACHINERY COMPANY

1103 Reedsdale Street Pittsburgh 33, Pa.

found it necessary to conduct a long and tiresome series of tests to determine the molding pressures that were actually encountered during the molding operation. We also investigated the performance of various cork combinations and compared them with the performance of various plastic combinations. Out of what started to be the development of a mat requiring a minimum of packing we have already provided the newspaper business with a plastic blanket which is being used or experimented with by more than 500 newspapers at the present time.

We have provided stereotypers with valuable information concerning pressures and behavior of mats during the molding operation and we have developed or are in the process of completing the development of a new process of molding.

I recognize that there is some resistance to the use of the plastic molding blanket. I also know that, with the exception of those who have large diameter cylinder machines and some few who cannot make the upper cylinder of their machines free wheeling, anyone who wishes to use the plastic blanket to improve his printing can do so. What many can do all should be able to do. The plastic blanket properly used will provide a better stereotype mold than any cork combination. It will provide additional shrinkage and it will come closer to placing everything in the form at the same level in the stereotype plate than any molding combination with which I am familiar.

With the plastic blanket it is wrong to raise cuts above type high. Thus the savings in handling special base alone will pay for the cost of the material. I call to your attention the fact that if a shortage of cork does develop, the plastic molding blanket may well be the answer to quality molding during a period of controls and shortages.

Engraving Study

Our study of engraving is an extremely interesting one. Any plant which has its own engraving department would like to

35 years of experience designing New Plants, Remodeling, Production Studies, Survey and Reports.

A few of our achievements—

W. F. Hall Printing Company, Chicago
Brown and Bigelow, South Bend
The Milwaukee Journal, Milwaukee

BROCHURE ON REQUEST

MORTON L. PEREIRA & ASSOCIATES
ENGINEERS AND ARCHITECTS
100 West Monroe Building • Chicago 3, Illinois

CHECK ON YOUR SUPPLY OF BOOTH'S ZINK CUT CEMENT

We suggest that the hundreds of users of BOOTH'S ZINK CUT CEMENT check on their supply right now. If you are low, get your order in now for this outstanding cut cement for mounting cuts and solidifying type elements for standing ads. If you have never used this famous cut cement, try it. You'll find it mounts cuts quicker and holds them tighter . . . in use all over the country by leading plants.

Prices: 75c per tube, $6.00 per dozen in the United States.

E. A. BOOTH RUBBER CO.
2855 Scarboro Road • Cleveland Heights, Ohio

CLASSIFIED ADVERTISING

ALL CLASSIFICATIONS

$.75 per line 1 9/16" wide. Minimum ad 5 lines, 29 characters per line. Cash with order.

CLOSING DATE—15th of Month preceding Date of Issue.

We will forward all mail addressed to Box Numbers. When answering Box Numbered ads, address as follows: Box Number . . . PRINTING EQUIPMENT Engineer, 1276 West 3rd Street, Cleveland 13, Ohio.

FOR SALE

Cutler-Hammer 40/3 H.P. faceplate type two motor full automatic newspaper press drive and control panel, 220 volt, 3 phase, 60 cycle AC, complete with resistors, push button stations, chain. Will power quad press, 16 page tubular or 4 decks single width. Used, serviceable, reasonably priced, available now. The Eastern Color Printing Co., Waterbury 20, Conn.

FOR SALE

Grinders for RUBBER PRINTING PLATES AND STAMPS. Get our trial offer. No obligation. Write for free literature. O. C. Haney Co., 3859 Victoria Ave., Los Angeles 8, Calif.

NEEDED NOW

Linotypes 8 and 14. Elrods and Ludlows. Highest Cash Prices Paid. Send particulars to American Printing Machinery Co., Inc., 88 Gold Street, New York City.

JOHN GRIFFITHS CO., INC.
NEWSPAPER PRESSES
APS STEREOTYPE SUPPLIES
11 West 42nd Street New York 18, N. Y.

SALE OF PLANTS • APPRAISALS • SURVEYS
ROBT. ROYDEN GREER
Printing Engineer
5201 WILSHIRE BLVD., LOS ANGELES 36
PLANT LAYOUT • LABOR-SAVING RECOMMENDATIONS

WEB DRYING APPARATUS
for ROTOGRAVURE • WEB-OFFSET • ANALINE LETTERPRESS
B. OFFEN & CO.
168 N. Michigan Ave. Chicago 1, Illinois

CLEAN CUT PRINTING

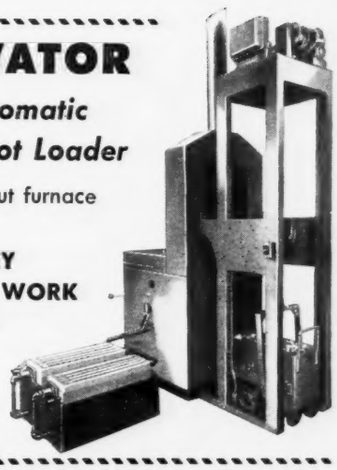
For better printing, let Herrick compound a "tailor-made" ink for you. Finest materials, carefully formulated to meet your pressroom needs, give you clean, sharp, "snappy" impressions . . . brilliantly clear highlights . . . rich, lustrous background blacks. For newsprint, letterpress, or offset.

FROM CUSTOM TAILORED INKS

HERRICK Inks

WM. C. HERRICK INK CO., INC.
Main Office & Plant • EAST RUTHERFORD, N. J.

The **MELTEVATOR**
. . . a New Automatic Melting Pot Loader
Supplied with or without furnace
SAVES TIME
SAVES MONEY
SAVES WORK
Write for Details



NOLAN *Corporation*
ROME, NEW YORK

★ **STAR CUT CEMENT** ★
Since 1936 — *For Mounting* — **Since 1936**
CUTS. .STEREOTYPES...ELECTROTYPES
65c per tube-$5.50 per doz. $5.00 per doz. in two doz. lots, $4 50 per doz. in gross lots.
★ **STAR CEMENT COMPANY** ★
45 Malone Avenue, BELLEVILLE 9, N.J.

VANDERCOOK
PRE-PRESS EQUIPMENT

Manufactured by the largest producer of proof presses and other pre-press equipment for letterpress, offset and gravure. *Write for a catalog.*

VANDERCOOK & SONS, INC.
900 North Kilpatrick Avenue • Chicago 51, Illinois

VANDERCOOK PRE-PRESS EQUIPMENT —CUTS COSTS!

Send Coupon for SPEED-FLEX Information

Orville Dutro & Son, Inc.
1206 Maple Avenue, Los Angeles 15, Calif.

Please send me immediately full information on the SPEED-FLEX, fastest and most modern job press for all types of form printing.

Name_____

Address_____

City_____ Zone____ State_____

SPEED-FLEX presses are designed and sold exclusively by Orville Dutro & Son, Inc., and are manufactured in the modern facilities of Western Gear Works, Lynwood, Calif., machinery and gear manufacturers for more than 50 years. 2

Photo-Engravers Research Meeting—The research contract with Battelle Memorial Institute was renewed for one year by the Board of Directors of Photo-Engravers Research, Inc., at a recent meeting held in Columbus, O. Work will be concentrated on the reduction of image area loss in zinc etching, the effect of various kinds of agitation on zinc etching, and the preparation of simple control procedure for use in zinc etching. Three folders will be published containing essential details of the results of investigations on the nitric acid etching of zinc, the electrolytic etching of copper, and the ferric chloride etching of copper. The next meetings of the Research Committee and Board of Directors will be held immediately preceding the meeting of the Southeastern Photoengravers Assoc. at Lookout Mountain, Tenn., June 16 and 17.

Present at the Columbus meeting are shown from left to right: W. T. Reid, Battelle Memorial Institute, Columbus, O.; Theo. Hommel, Precision Engraving Co., Ferguson, Mo.; Addis W. Dempsey, Donovan & Sullivan Engraving Co., Boston; Marvin C. Rogers, R. R. Donnelley & Sons Co., Chicago; S. Watson Cheney, Watson Cheney Photo-Engraving Co., Wethersfield, Conn.; E. Bartlett Brooks, Wayne Colorplate Co. of Ohio, Dayton, O.; George Hoffman, Dixie Engraving Co., Savannah, Ga.; R. W. Schrott, Conemaugh Engraving Co., Johnstown, Pa.; J. Homer Winkler, Battelle Memorial Institute; Homer Green, Wilson Engraving Co., Dallas, Tex.; S. M. Terry, Battelle Memorial Institute; and D. J. Byers, Battelle Memorial Institute.

reduce the time required to produce a completely engraved flat. This does not necessarily mean that such a reduction in time and cost would result in reduced employment in the engraving department. On the other hand, many publishers would like to use more editorial cuts than is now possible and many publishers would like to engrave many forms of display advertising. In fact, the reduction in cost of 50 per cent in the engraving department would probably result in a sharp increase in the use of engraved copy. The benefits to newspapers and to employed personnel would be immediate.

Dry Offset Costs

Reproduction by dry offset, utilizing screens of less than 100 lines, can compete with the average newspaper reproduction by gravure. The reason dry offset is not more universally used is because the cost of plate preparation is exceedingly high. If the time of engraving could be greatly reduced, the cost of dry offset plates could be reduced and dry offset would stand an excellent chance of becoming an accepted high grade method of reproduction.

I know that you have all heard of direct plate printing where an original engraving is attached to a dummy stereotype and used for printing direct on the web of paper. The results of such printing are high quality. The economics at the present time are questionable, again because of high engraving costs. This is not a process which could be utilized by large metropolitan newspapers, but for small daily papers it has wide application.

There are three reasons why a study of engraving procedures is warranted: (1) Because it would immediately reduce engraving costs in existing newspaper plants and provide for increased use of engraved material, (2) It is an economical necessity if dry offset is to be made suitable for newspaper reproduction, either in black or in color, and (3) It is required in direct plate printing.

We are attacking the problem of high speed etching in many different ways—in our own laboratory, through contracts with existing research laboratories, and cooperatively with manufacturers. It may be that our friendly competitors, through cooperative effort, will be the ones to be successful. On the other hand we may find the successful conclusion. It matters not who is first, nor what the method is, provided it is made generally available.

Our third and final study of a fundamental nature is the problem of determining what surface characteristics of paper and what characteristics of news ink affect the deposition of ink on paper. The benefits from success in this program will not be immediate. They will be indirect and will reach us in the form of improved newsprint and news ink. It is a program which is being as widely discussed as the plastic blanket. Three progress reports have been issued by the Institute of Paper Chemistry who are conducting this research with our support. One instrument has already been developed which for the first time provides a method of determining the bonding characteristics of paper fibers consistently and on a reproducible basis.

ADVERTISERS' INDEX
April 1951

P. E. E. REPRESENTATIVES

WILLIAM L. OSBORN, Eastern Manager, 1712 Grand Central Terminal, New York 17, N. Y. Phone MUrray Hill 6-5980.

EUGENE A. POWERS, Midwest Manager, 612 N. Michigan Ave., Chicago 11, Ill. Phone: SUperior 7-2444.

American Roller Co. 18

Baum, Russell Ernest, Inc. 69
Blatchford Div., National Lead Co. 61
Booth, The E. A., Rubber Co. 70
Burgess Cellulose Co. 62

Certified Dry Mat Corp. 63
Challenge Machinery Co., The 53
Chemco Photoproducts Co., The 24
Cline Electric Mfg. Co. 19
Collmar Corporation 51
Cottrell, C. B., & Sons Co. 9
Cromwell Paper Co. 51
Cutler-Hammer, Inc. 20, 21

Dayton Rubber Co. 13
Dexter Folder Co. 11
Dickerson, Robert W. 67
Dilts Machine Works 47
Dutro, Orville, & Son, Inc. 71

Eastern Newspaper Supply, Inc. 49
Edes Mfg. Co., The 50
Electric Boat Co., Printing Machinery Div. 52

Federated Metals Div., American Smelting & Refining Co. 10

General Electric Co. 14, 15
General Plate Makers Supply Co. 65
Gifford-Wood Co. 55
Goss Printing Press Co., The 17
Greer, Robert Royden 71
Griffiths, John, Co., Inc. 71

Hamilton Mfg. Co. 59
Hammond Machinery Builders, Inc. ..... Inside back cover
Harris-Seybold Co. 3
Herrick, Wm. C., Ink Co. 71
Hoe, R., & Co., Inc. 45

Imperial Type Metal Co. 54, 67
International Printing Ink Div., Interchemical Corp. 16
Intertype Corporation ..... Outside back cover

Lanston Monotype Machine Co. 23
Linotype Parts Co. 53
Ludlow Typograph Co. 7

Matrix Contrast Corp. 26
McAdams, John, & Sons, Inc. 66
Mergenthaler Linotype Co. 36, 37
Miller Printing Machinery Co. 65, 66, 68, 70
Minnesota Mining & Mfg. Co. 22
Monomelt Company, The 63
Morrison Company, The ..... Inside front cover

New England Fibre Blanket Co. 67
New Products Div., Beveridge Paper Co. 68
Nolan Corporation 71

Offen, B., & Co. 71

Paper Manufacturers Co. 60
Pereira, Morton L., & Associates 70
Photovolt Corporation 68

Rapid Roller Co. 8
Rathbun & Bird Co., Inc. 67
Richards, J. A., Co. 60
Robertson, R. R., Co. 61
Rosback, F. P., Co. 56
Rouse, H. B., & Co. 58
Runion, H. Earle 63

Scott, Walter, & Co. 6
Shulman, Ben, Associates, Inc. 69
SKF Industries, Inc. 25
Sta-Hi Corporation 1
Standard Process Corp. 63
Star Cement Co. 71
Strong Electric Corp., The 2

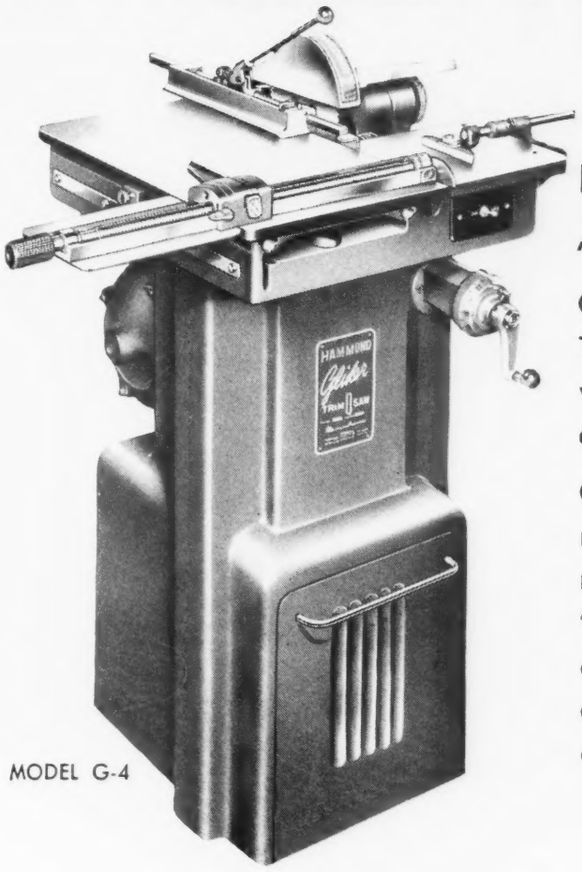
Teletypesetter Corporation 57
Timken Roller Bearing Co., The 12
Tingue, Brown & Co. 48

Vandercook & Sons, Inc. 71
Vulcan Rubber Products, Inc. 64

Western Gear Works 71
Wood Flong Corp. 69
Wood Newspaper Machinery Corp. 4

Many of our production executive readers will respond to your Position Wanted Ad in the Classified Section of *Printing Equipment Engineer*. Rates on p. 71.

Step up and saw with a Hammond TRIMOSAW



MODEL G-4

HAMMOND *Glider* TRIMOSAW

"THE SAW WITH THE BALL BEARING TABLE"

GLIDER ACTION . . . smooth, powerful, fast! The ball bearing table and the 1 HP motor provide the fastest, easiest sawing ever enjoyed on a printer's saw.

GLIDER ACCURACY . . . every part is precision made to produce precision work for you. All moving parts have wear take-up to insure you "new machine" performance and accuracy indefinitely. The Glider TrimOsaw saves you time and money through speedy operation and accurately sawn materials.

HAMMOND Mercury TRIMOSAW

"THE SAW WITH THE BALL BEARING GAUGE"

MODEL M-9

HAMMOND *Ben Franklin* TRIMOSAW

"FINEST QUALITY SAW IN THE LOW PRICE FIELD"

MODEL BF-10

Hammond Machinery Builders INC.

1604 DOUGLAS AVENUE • KALAMAZOO, MICHIGAN

It's the touch that counts

To an Intertype operator, the co-operative response of his keyboard may be compared to the response of a fine piano keyboard... both the machine operator and the musician appreciate the smooth, uniform key action that requires only a light, effortless touch.

Many inner refinements of the Intertype line composing machine make this light touch possible. Keyboard cam yokes are free-pivoted. Built-in springs in the keyrods take up overmotion and slack. All Intertype magazines are equipped with simple one-piece escapements.

This effortless touch is not confined to the keyboard alone. There are many other work-saving features at the operator's fingertips, for instance: the easy-action Mixer-Shift Lever, the handy Autospacer Knob and the convenient Magazine Power Shift Lever.

Doing difficult tasks with an easy touch counts in many ways. It means less operator fatigue... fewer slugs in the hellbox... more production. On an Intertype line composing machine, the operator plays a profitable typesetting tune... Look to PROGRESSIVE INTERTYPE.

INTERTYPE

INTERTYPE CORPORATION • BROOKLYN 2, N. Y.

Brooklyn 2, New York
Chicago 5, Illinois
San Francisco 11, California
Los Angeles 15, California
New Orleans 10, Louisiana
Boston 10, Massachusetts

TEXT 11 PT. FUTURA BOOK WITH DEMIBOLD